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SCIENCE AND AGRICULTURE.

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[IN 1845, the New-York State Agricultural Society, offered a premium of one hundred dollars for the best essay on the Connexion of Science with Agriculture. At the January meeting of the Society for 1846, a committee consisting of EBENEZER EMMONS, ANTHONY VAN BERGEN, and AMOS DEAN, to whom the essays offered under this head had been referred for consideration, reported that they awarded the premium to the following, of which JOHN J. THOMAS, of Macedon, is the author. It appears to have been the design of the writer of this essay to show the connection of Science with Agriculture in a strictly practical light—to show in what particular department science has already rendered the greatest aid, and in what direction the greatest assistance is still to be expected. This design has been carried out in a manner which can hardly fail to be satisfactory and beneficial.]

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The past fifty years have been remarkably distinguished by numerous and extraordinary improvements in the useful arts. A great portion of these have resulted from the direct application of scientific principles. The wonderful advancement in nearly all branches of manufacture, which so eminently distinguishes the present century from the past,* is largely indebted to science. It was a thorough knowledge of chemistry and mechanical philosophy, that enabled James Watt to place the steam engine at once before the public as a powerful and efficient machine—a machine which has within the memory of middle-aged men, almost changed the face of civilized countries; and has spread towns, villages, and cultivated fields, in regions where, but for this invention, nothing would be seen but unbroken forests.

Very great advantages have resulted from the precision with which the principles of mathematics and mechanical philosophy, may be applied in arriving at practical results. The accurate knowledge of pressure and force, in constructing machinery, and in civil engineering, which calculation enables us to obtain, before trial, is of the greatest importance. The mathematician, who knows the force of gravity, may sit in his closet and tell us, without error, the velocity of a falling body, and the precise increase in its rate of descent; or he may determine, by calculation, from a knowledge of this velocity, the exact length of a pendulum to beat seconds. The engineer may ascertain, before he erects his work, the best form of an arch, to afford the greatest strength against the pressure of a superincumbent weight; or he may calculate accurately, the angle at which the lock gates of a canal should meet, to give the greatest security against the pressure of the head of water upon them, before a single trial has ever been made.

Interesting and important practical results are also obtained in the manufacture of various articles of commerce, by the application of the principles of chemistry. Geology has rendered great aid in the art of mining, in all its departments. Not only in explorations for the more valuable metals, but for the coarser, but not less important articles, salt and coal, tens of thousands might often have been saved, by a knowledge of the relations and character of the rocky strata at the surface of the earth.*

The precision with which the principles of natural philosophy have been variously applied in machinery and engineering,—and chemistry and geology in manufactures and mining,—has led to the apparently plausible conclusion, that not less important results might be at once obtained by the application of science to agriculture. From the rapid advancement of science within the present age, the opinion seems to be gaining ground, that some great and extraordinary results are about to take place; that the slow progress in agriculture which practice and experience have effected, will soon commence taking more rapid and powerful strides; that we are about to remove the veil of obscurity and uncertainty, which hangs over so many operations in culture, understand every process, and so completely control the growth of plants, as almost to set man free from the labor of tilling the earth by the sweat of his brow; or in other words, that the agricultural millenium is near at hand. But a more thorough examination, will clearly show that we have no reasons for drawing such a conclusion; that the other sciences, have as yet, accomplished directly, but little for agriculture; and that years of slow and patient experiment must yet determine many points, which are already by many persons taken for granted. The same precision with which conclusions have been arrived at in other arts, is entirely out of the question here. A great deal of uncertainty must, for a long time yet to come, attend the applica-

* A single instance of this advancement is mentioned by J. F. Herschel, in the fact that a man can now produce about two hundred times as much cotton goods, in a given time, from the raw material, as he could seventy or eighty years ago.

* Some years ago, twenty thousand pounds were expended in England, in a useless search for coal in Hastings sand. Although there were some apparent indications, a geologist could at once have predicted failure. "All are familiar," says James Hall, "with the mining enterprizes, now less frequent, in search of coal along the valley of the Hudson; in which there have been expended more than half a million of dollars within the last fifty years." And Murchison, in his treatises on the geology of Wales, remarks, that more wealth has been expended in the useless search for coal in that part of the country, than all the geological investigations of the whole world have cost.

tion of other sciences to the art of cultivation. The investigation of questions strictly chemical, is far easier than to determine the intricate and combined relations existing between chemistry and vegetable physiology. In the first place, the analysis of soils is one of the most difficult of all kinds of earthy analysis. In the next, vegetable chemistry is involved in a great deal more uncertainty than other departments of the science. Thirdly, the changes which are constantly taking place in the growth of plants, variously influenced as they are by the atmosphere, by drought or moisture, by the nature of the soil and the many different materials of which it consists, some fitted for assimilation, and others not,—are from these causes, and the time required to effect them, and the minute quantities of matter controlling them, often entirely beyond the closest observations, and can be determined but very imperfectly by an examination of the final results.

Now, the object of these remarks, is not to denounce nor discourage the application of science to agriculture; but, directly the reverse, to prevent a total rejection from the disappointment and disgust, which must follow the practice of holding up false hopes. If an enterprise is attended with peculiar difficulties, that enterprise is not forwarded by representing it as easy of accomplishment, by concealing its difficulties and overstating its advantages. Those who are falsely allured at the outset, will, from the disappointment resulting, be led to refuse even the benefits which might be secured. Hence, one of the greatest injuries to science, is to invest it with false colors. On the other hand the highest benefit is to strip it of its artificial dress, and exhibit its true character, that proper caution may be used, and success instead of chagrin be the consequence.

A brief glance at the different ways in which science is expected to benefit agriculture, may serve to show in what direction the greatest assistance will be afforded.

In the first place, a more certain result is to be looked for in no quarter, than in the application of the principles of mechanical philosophy to the construction of farm implements and machines. A great and decided benefit has already followed from this cause; and no doubt machines might be much improved, simplified, and rendered lighter, and at the same time stronger, by a strict observance of the nature of forces, of the mechanical powers and elements of machinery, to determine precisely where strength is indispensable, and where also it is not needed; and in changing and adapting the moving power in the best possible manner to effect the intended purpose. It is highly essential, that every thing of the kind in constant employ, and requiring for its use, perhaps thousands of repeated motions of the hand in a single day, should not be encumbered with a needless pound in weight. The laborer who uses the hand-hoe, usually makes with it no less than two thousand strokes in an hour, or twenty thousand in a day of ten hours. If in any part, where strength is not needed, it is made unnecessarily heavy, even to the amount of half a pound, then the aggregate force uselessly expended, would amount to no less than ten thousand pounds, or five tons, in a single day. In larger machines, worked by horses, including wagons and carts, as well as threshing machines, and even plows and harrows, there is no doubt in nearly all cases a waste of power. A strict regard to mechanical principles, and their mathematical application, throughout the numerous implements, tools and machines, constantly in use by every farmer, would be of the highest benefit. An entire volume might be written on this subject alone. It is true that the manufacturer of these, is the person directly concerned; but farmers too are deeply interested in the improvement.

Those sciences, however, which are regarded as more particularly and directly applicable to agriculture, are vegetable physiology, and chemistry, and geology. The intimate connection between vegetable physiology and vegetable chemistry, and between geology and the chemistry of the soils, render them all in a manner inseparable, and they will be mostly considered together.

The relations of vegetable physiology to the practice of horticulture, are vastly more important than to agriculture. The far greater number of species which come under the cognizance of the horticulturist, and the variety of treatment they need, render it very necessary that he should understand the nature of acclimation, the influence of heat, cold, moisture, and fertility, on the germination, and action of the roots, stems, leaves, and various other parts of plants. Such knowledge would be also highly advantageous to the enterprising agriculturist, whose object, aside from the profit, is to introduce new vegetable productions for general culture, and who should therefore understand the effect of removal to an unlike climate and soil.

But this science often becomes very useful to the common farmer. A knowledge of physiology, and of the enormous quantity of moisture which plants perspire insensibly from the leaves, would have wholly prevented the very common and pernicious error, that weeds preserved moisture in the earth, and shade contiguous plants from the effect of drought, while in fact every weed is an outlet through which moisture as well as nourishment is rapidly drained from the soil. An acquaintance with the principles of botany would have prevented the prevalence of the equally pernicious notion, that the weed so common in wheat, termed chess, could ever be transmuted to wheat, a plant not only of a different species, beyond the boundary of which, a plant by no change ever passes, but is also of a different genus. A knowledge of the fact, that no root of a plant can long remain alive, which in a growing state, when deprived of its breathing apparatus, the leaves, would have prevented the wild attempt practiced some years ago, of endeavoring to destroy patches of canada thistles, by carefully digging up every fibre of the roots from a depth of several feet; while a simple, obvious, and efficacious remedy consisted in merely starving the roots, by cu ting off unremittingly the supply from the leaves for a proper length of time. Were the vital importance of the leaves to the health and perfection of the seeds of plants properly understood, the practice of "topping" corn would never have been resorted to. In numerous other cases, this science serves to throw light on operations of culture, and to assist correct practices.

An intimate and important connection exists between agriculture and chemistry combined with vegetable physiology. In some cases, considerable accuracy of reasoning, and certainty of application may exist; in others, all seems as yet involved in uncertainty. The triple relations of the analysis of plants, of soils, and of manures, and the determination of the constituents of each, promise, perhaps, more important results than any other department.

The knowledge of the organic constituents of plants, composed of various combinations of the four elements, carbon, hydrogen, oxygen, and nitrogen, may afford some very useful suggestions in practice. By knowing for instance, the proportions of these constituents, we can often arrive at a comparative value of different kinds of grain. Analysis shows that some vegetable products contain more starch than others; some abound in gluten; some contain a large portion of oily matter, and others are distinguished for other ingredients. Now, some of these are best adapted to one object, and others to another object. If for instance, in feeding animals, it is intended to fatten them, those grains would be pointed out as best, which most largely contain oil; if to make them grow in flesh and muscular parts, those which abound in gluten; if the object is to make a cow yield butter, food containing oily matter should be given; if to yield cheese, beans, peas, and clover should be given; and if milk in quantity merely, succulent food should be employed. But although in these instances, analyses may suggest useful practices, yet the *amount* of the benefit must be determined by practice. Theory may point out one course as better than another, but the difference may be so small, as not to merit attention in practice, which can only be determined by direct experiment.*

* All results of this kind are greatly influenced by circumstances. For instance, experiments accurately conducted, have shown

The difficulty of arriving at a correct practical conclusion, in relation to the quantity of nutriment in grain and other food by analysis, will be evident from the fact, abundantly proved by some of the best farmers in New-England as well as in Western New-York, that corn ground and boiled with water, is more effective in fattening hogs, than twice the amount fed in the dry grain.

Analysis, in other cases, will show the comparative value of different varieties of the same grain. A very valuable ingredient in wheat is gluten; of this, French wheat has been found to contain 12 per cent.; Bavarian, 24 per cent. H. Davy obtained 19 per cent. from winter, and 24 from summer wheat; from Sicilian, 21, and from Barbary wheat, 19 per cent. But the uncertainty of permanent dependance on such analysis is proved by the fact that the nature of the soil may considerably influence the result. Hermbstædt found that the same wheat which, with vegetable manure only, gave scarcely 10 per cent. of gluten, yielded more than three times as much when manured with powerful animal substances, rich in ammonia. Some varieties of the potato are found to contain more starch than other varieties; and this quantity is also controlled to some extent by soil.

The analysis of plants will also indicate what plants are best to employ as manure by plowing in the green crop. A considerable portion of nitrogen is essential to the growth of wheat. Now clover is also found to contain a large portion; hence a crop of clover becomes eminently useful as manure for this grain. Wheat abstracts its nitrogen chiefly from the soil, and is consequently exhausting; clover obtains it mostly from the air, and is not exhausting, but becomes in this way the provider for the wants of the wheat.

Analysis has also proved that in addition to the usual organic elements, there are about ten organic or earthy constituents, most of which are invariably found in the same species, and are indispensable to its healthy growth. These are potash, soda, lime, magnesia, alumina, silica, iron, manganese, sulphur, phosphorus, and chlorine. These substances are derived by the plants from the soil; hence a fertile soil,—one from which plants may draw these essential constituents, must of course contain them. Here the intimate relation between the constituents of plants and of soils is at once obvious. Hence soils which are destitute of a part of these ingredients, or contain them in very small proportions, is necessarily sterile; or if they be destitute of one only, the same result must take place, if that one is an essential ingredient of the crop growing upon them.* And here it is that the great benefits to be derived from analysis of soils, at once force themselves upon the mind. If a soil is barren, determine its constituents—see what is wanting—what is in excess; apply at once the deficient ingredient, or counteract or neutralize the injurious one, and fertility is restored. A soil was shown to H. Davy, which, though apparently abounding in every enriching material, was incapable of yielding a crop. He found by examination, that it was poisoned by a considerable portion of sulphate of iron or copperas. He decomposed this sulphate by applying lime, and the difficulty was removed. Here the remedy was simple and certain; but such cases very rarely occur in practice.

As different plants draw from the soil the same substances in unlike proportions, analyses of these plants will show which substances are most largely needed for the different crops. And it points out a reason of the fact long since known, that a field which may bear a profitable crop of one kind, may be unable to yield a good return of another; and that by alternation or rotation, different portions are variously abstracted, and time left for the restoration of each by various processes in nature, and by artificial means. But the fact that these ingredients vary in the same plants, shows the great necessity of caution in drawing practical conclusions. Justus Liebig, one of the most eminent chemists of modern times, but whose deductions are often deficient in value from a want of sufficient corroboration by actual experiment in cultivation, says that one hundred parts of the stalks of wheat yield 1.55 parts of inorganic constituents; barley 8.54 parts; and oats only 4.42 parts, all being of the same composition. "We have in these facts," he then adds, "a clear proof of what plants require for their growth. Upon the same field which will yield only one harvest of wheat, two crops of barley and three of oats may be raised." But every good farmer knows that oats is exhausting to an extraordinary degree, instead of being less so than barley, and only one-third as much as wheat, according to this conclusion of Liebig. Some of the best farmers of New-York, never suffer an oat crop to grow on land ever appropriated to wheat. Professor Johnston has, however, demolished Liebig's reasoning, by showing that these inorganic constituents are not only different in composition, but greatly variable in quantity, the oats sometimes considerably exceeding the barley, and the wheat varying from 3.5 per cent. to 15.5 per cent. But neither of these chemists appear to have considered the composition of the *grain*, nor to have remembered the difference in the *weight* of the crop. Superficial reasoning and general theories often appear beautiful; but thorough investigation in detail, and the results of actual practice, will frequently exhibit their uncertainty and error.

A department of analysis, perhaps the least liable to erroneous results, is the examination of *manures*. Fertilizing substances are known by their effects applied separately to plants or in mixture; or by the fact that fertile soils and well grown plants are found to contain them. Now, analysis will show what proportion of the fertilizing materials exist in different kinds of manure; and hence the value of manures may be ascertained, at least to some extent, by a previous chemical examination. A comparison of common manure with guano, exhibits this principle in a striking light:

A ton of manure yields	2	pounds and	4	ounces of potash.		
" guano	" 66	"	8	"	"	
" manure	" 1	"	10	"	soda.	
" guano	" 36	"	15	"	"	
" manure	" 5	"	1	"	phosph. acid.	
" guano	" 283	"	9	"	"	
" manure	" 1	"	4	"	sulph. acid.	
" guano	" 93	"	8	"	"	
" manure	" 1	"	9	"	chlorine.	
" guano	" 62	"	00	"	" *	

Here it will be seen that most of these enriching ingredients are from thirty to 70 times as great in quantity in guano as in common manure. Experiment accordingly proves that guano often produces from thirty to seventy times as great a growth in plants, as an equal quantity of manure.

One of the most powerful manures is poudrette, a preparation from night-soil. Let us see what kind of comparison analysis will draw between this substance and guano:

A ton of night-soil yields	6	pounds	7	oz.	of potash	
" guano	" 66	"	8	"	"	
" night-soil	" 4	"	10	"	soda.	
" guano	" 36	"	15	"	"	
" night-soil	" 120	"			phosph. acid	
" guano	" 283	"	9	"	" *	

Here we see that guano still vastly exceeds even night-soil in these important requisites to fertility;

* London Ag. Gazette

that Indian corn, ground and boiled, will fatten hogs more than twice as fast as the same amount of raw material.

* Those plants, says C. W. Johnson, which yield salt, never grow well on lands which do not contain it; those in which carbonate of lime is found never flourish in soils from which this is absent. Plants which abound with nitrate of potash, such as the sun-flower and the nettle, always languish in soils free from that salt; but when watered with a weak solution of it, their growth is very materially promoted, and saltpetre is then found in them, upon analysis, in very sensible proportion. The same writer states, that an old pasture became, in spite of various liberal top dressings of different manures, incapable of producing a luxuriant crop. At last peat ashes were found to produce the best result, or an increase of more than a ton of hay per acre. These peat ashes were found to contain one-eighth of their weight of gypsum, which was the ingredient the soil needed. Gypsum itself was then applied with the same successful result.

although the latter possesses a very striking superiority in composition over common manure. We accordingly find in practice, that the comparative value of these different manures is very nearly the same that analysis indicates, when the average of experiment is taken.

There are many other substances which chemistry points out as valuable for manure, which are found useful in practice. Many of these, however, if used singly, or mixed with only one or two others, often give uncertain results, frequently prove failures, and sometimes are a positive injury. Sulphate of ammonia, nitrate of soda, sulphate of lime, silicate of potash, and other salts have been known to produce extraordinary growth; but in other cases were valueless. So many causes control their action, that this uncertainty must continue to exist. The soil may be already supplied with them; drought may derange entirely their action; and other influences now unknown may produce a similar result.

Common barn-yard and stable manure, though not so powerful, appears to be more universally benefical than any other from the certainty of its operation. This certainty is dependent on the great number of its ingredients. It contains a large portion of decaying vegetable matter derived from the pulverized hay consumed by the animal; it is rich in ammonia and other animal matters, resulting from the secretions; and it contains many salts derived from both these sources. Poudrette possesses nearly the same advantages; and guano, from its great quantity of animal matter and enriching salts, rarely fails if properly applied. With single substances, however, there is great uncertainty, until experiment points the way.

Wheat was found by H. Davy to contain more nitrate of potash than any other farm product; yet the author of British Husbandry says, "although it has generally occasioned an increase of straw, the yield of grain has not been improved, and the crops have in many instances been found unusually subject to mildew." Similar experiments, by the writer, have produced no favorable result. Hence we perceive that supplying, simply, an essential ingredient, does not always answer the purpose. Artificial guano, made by an observance of the analysis of the natural though useful, has not been found nearly so powerful as the latter. Nitrogen, supplied properly to plants, causes a healthy and rapid growth; yet although this element exists uncombined as a component of the atmosphere, and in direct contact with the leaves of plants, they will perish for want of it before they will draw a particle of it from the air. Hence in all chemical deduction relative to manures, the experiments of the cultivator only are to be depended on, and to remain as the decisive test. Suggestions of incalculable importance may come from theory, but practice alone must prove their value.

The importance of the analysis of soils, to determine deficient ingredients, and then to supply defects, has been already adverted to. Although its value thus appears to be very great, and has been much extolled by chemical writers and their imitators, yet there are difficulties in practice which render extreme caution in drawing conclusions very necessary. The constituents of plants may indeed be determined with much accuracy; and the different ingredients in manures, and their consequent adaptation to those plants, and of their comparatively fertilizing effects, may be ascertained frequently in the laboratory. But the extensive diffusion of these ingredients through broad acres of soil, and the exceedingly minute proportion which some bear to the whole bulk of the soil, renders the determination of these proportions, if not the actual existence of the ingredients, difficult if not impossible. A distinguished chemist told the writer, that for ordinary earthy substances, the detection of a thousandth part required skilful analysis. Minuter portions of some constituents are more easily detected than of others. But suppose a ten-thousandth part the utmost limit for agricultural practice, a few instances will show the inadequacy of analysis in cases which may occur:

A considerable portion of sulphate of lime or gypsum is found to exist in red clover, and other leguminous plants. Hence a reason that gypsum so eminently benefits the growth of red clover. And hence reason would here suggest, that to determine the fitness of a soil for clover, an analysis should be made; if it contain gypsum all is right, and the clover will flourish; but if not, then a dressing of this material must be applied. This is the theory. Let us compare it with practice. A hundred pounds of gypsum to the acre has often doubled the clover crop; and a tenth part of that quantity, or ten pounds to the acre, will produce in some cases very sensible effects. After it is spread on the ground, and before any sensible effect is produced on the crop, the rain has usually dissolved it and carried it into the soil and among the roots of the young plants. It thus becomes intimately diffused through the soil. Now, will analysis detect its presence? If the soil is a foot deep, half a grain to a pound will indicate a hundred pounds to an acre. Yet this half a grain to a pound is only one fourteen-thousandth part; though often producing a most luxuriant growth of red clover. A tenth part of that is only one hundredth and forty-thousandth part; yet this minute portion often is found to exert a very visible influence in growth; though far beyond the reach of ordinary analysis. A crop of clover of a ton and a half to the acre, contains only three times this amount, or thirty pounds of gypsum in its stems and leaves.

Again; twenty pounds of muriate of ammonia applied to an acre of rye added five bushels to the product.* But this is only one seventy-thousandth part of the soil. One hundred and forty pounds of guano *added* more than sixteen hundred pounds to an acre of hay. But this, manure, when diffused through the soil, constituted only about a ten-thousandth part; its proportion of phosphoric acid, forming about one eighth, and a very important ingredient, would be about one eighty-thousandth part; its sulphuric acid would constitute less than a two-hundred-thousandth part, and its potash about one three-hundredth-thousandth part. I am not aware that many chemists claim sufficient skill to determine such small proportions in the soil; yet these experiments show their great practical influence when existing as added constituents.

The ammonia of the atmosphere is considered by eminent chemists as holding a very important relation to the healthy and vigorous growth of plants; yet its presence has never been directly detected, and only indirectly by favorable opportunities when absorbed in snow or rain-water. Eminent and accurate experiments had not discovered even this until within a few years.

It is not denied that a bright light may be thrown on the practice of agriculture by carefully conducted analyses of soils. The results of many examinations which have been made, show frequently a very striking difference between fertile and barren soils. But these analyses were conducted with the most rigid care and accuracy by men of such skill and eminence as could hardly be expected to be at the service of any common practical farmer. And after all accurate experiments in cultivation would determine all that is necessary in many points of practice, and would in any case be needed as a test of the truth of the theory.

It is to be hoped that chemists will continue to pursue their investigations on doubtful points, until certainty, if possible, may be arrived at; and that all well-established facts may have as extensive application in farming as their value merits. But it must be admitted that there has been a disposition to take too much for granted, and to overstate the certainty of success in connecting chemistry with agriculture. The precision so striking in other sciences, and other applications of this science to various arts, does not hold in case of the growth of plants, which, though governed by fixed laws, is too much controlled by circumstances and too much obscured from view, to be thoroughly understood. This growth is slow and imperceptible to the sight; plants are surrounded by an invisible air above ground, and are hidden from view below ground; their surfaces receive

* Johnston's Lectures, Appendix, p. 29

nourishment by pores only seen by powerful microscopes; the nourishment is drawn from vapors and floating gases in the air, and liquids in the earth charged with many substances in minute proportions; and the whole process is entirely beyond the reach of the closest scrutiny of the eye.

It is not surprising therefore that there should be a difference of opinion among high authorities. The constituents of vegetable mould have led to much dispute, and no less than twenty different substances have been discovered or named by various chemists. Dr. Dana, in attempting to prove the inutility of applying lime and potash as manures, shows that nearly all soils contain lime and potash enough for the growth of all the crops which may be produced on the land for thousands of years. Yet other chemists dwell on the importance of these substances applied as manures, and direct experiment shows their utility.* Liebig says that "wheat does not flourish in a sandy soil, and that a calcareous soil is also unsuitable for its growth unless mixed with a considerable quantity of clay"—"because these soils do not contain alkalies in sufficient quantity." But Johnston shows not only that excellent wheat crops are reaped from those soils, but that turneps, universally admitted to be finely adapted to sandy land, contain in a single crop of ordinary productiveness, nearly ten times as much potash and soda, as a crop of fifty bushels of wheat with the straw included. The contradictions of chemists on the single article of gypsum alone would perhaps fill a volume. According to Kollner, its action depends on the power possessed by lime to form, with the oxygen and carbon of the atmosphere, compounds which are favorable to vegetation; according to Mayer and Brown, it merely improves the physical properties of the soil; while according to Riel, it is an essential constituent of the plant. Hedwig called it the saliva or gastric juice of the plant; Humboldt and Thaer considered it a stimulant; Chaptal ascribed its action to a supposed power of supplying water† and carbonic acid to plants; and Davy regarded it as an essential constituent of plants.‡ According to Liebig, it fixes the ammonia of the atmosphere; according to Sprengel, it supplies sulphur for the formation of the legumin of leguminous plants; and according to Dana it merely assists the decomposition of other substances in the soil.

The question has been much oftener asked than answered, "Who shall decide when doctors disagree?" If great men who have spent their whole lives in examining such questions, are so much at variance, to what power is the farmer to look, to dissolve the thick mist and remove his doubts, in relation to such matters? The answer cannot be avoided, *To repeated, varying, and actual experiments in practical cultivation.* Such experiments have long since established the value of gypsum, lime, and other manures; while eminent chemists are still disputing not only on their theory of action, but whether they are really of any value whatever.

The distinction must be drawn between *The Application of Science to Agriculture*, and THE SCIENCE OF AGRICULTURE. The former has been already explained; the latter consists of the facts which practice has established, and the truths it has developed, reduced to a system, and in some degree arranged under fixed principles. The Science of Agriculture explains the theory and operations of draining plowing, subsoiling, and manuring, of rotation of crops, of cultivating the soil, of adapting culture to crops, and many other practices which distinguished the best modern specimens of farming. It is a systematic arrangement of knowledge, which the experience of centuries has accumulated. Many of its principles, it is true, are those of other sciences; but they were usually discovered in the course of cultivation, before those sciences had a distinct existence. A professor of one of our colleges has cited the practices of draining, subsoil plowing, trenching, and clovering and plastering, as specimens of the application of science to agriculture. But these have all resulted entirely from experience; they are indeed specimens of scientific farming, but they originated from the science of agriculture, as just explained, and not from science *to* agriculture in its common acceptation.

The best modern practices of agriculture, are in nearly all cases much in advance of the theory. It is for this reason that the cause of agricultural improvement would be much better served by holding up for imitation the experience and management of the best farmers of the day, rather than a too frequent reference to chemical authority. How many of our citizens might have avoided shipwreck of their property, and made handsome profits, if they had followed the best established courses of cultivation. But, have any failed for want of knowing the sciences? Some of our farmers make money rapidly,—that is, they farm *well*. Others make a scanty living; and others are reduced to insolvency. What is the reason of the success of the former —what the cause of the failure of the latter? Is it a knowledge of chemistry in one case, and a deficiency in the other? No one will ever think of ascribing the results to such causes.

It is not denied, that important aid may yet be derived from agricultural chemistry. But its advance must be slow and attended with caution. Years of careful and accurate analyses of soils, and of the trial of manures, separate and mixed, in connection with experiments on growing crops performed with the utmost judgment and precision, can only settle uncertain points. Reasons will thus be rendered clearer by science, and practices explained, enforced and established. But these experiments must be performed chiefly by the enterprising few, and not by the common farmer. The study is indeed deeply interesting and fascinating; and every one who has a knowledge of the natural sciences, will not unfrequently find useful applications in the every-day business of life. But to hold them up as a means by which the young farmer is to conduct his business most profitably, while he yet remains wholly or partially ignorant of the most improved modern systems of practice and management, cannot be followed by the best results. The most important knowledge must be first attained, and afterwards that which is less essential in practice. If possible, neither should be neglected. We should not denounce any study because it is encompassed with some difficulties. Chemistry is affording many valuable suggestions for trial and practice; and as Professor Johnston very justly remarks, "It is foolish to refuse to avail ourselves of the morning light because it is not equal to the mid-day sun."

* It has been asserted by Liebig and others, that the benefit of lime is owing to the potash it contains. Lime has been applied with great success to soils in Western New-York, which contained many broken fragments of limestone. The lime was from localities, where, by the analysis of Dr. Beck, no potash existed.

† The opinion that gypsum owed its efficacy to the absorption of moisture, has been common in this country. H. Davy exposed a portion of gypsum to the air three foggy nights, and found it absorbed only a 720th part. Calculation will show that two bushels spread over an acre, would absorb at the same rate, a stratum of moisture only one-millionth of an inch in thickness, or five thousand times thinner than paper.

‡ Hlubeck.

IS DEEP PLOWING ALWAYS BEST.

L. TUCKER, ESQ.—It appears to me, an error exists in the minds of some agriculturists, on the subject of deep plowing, especially in cultivating light soils, except where heavily manured.

The prevailing opinion has been, and probably still to a great extent obtains, that, to be a good farmer or planter, it is necessary to plow deep, without reference to the depth of the soil. We find crops designed for premiums, usually plowed deep, and of course manured strongly; doubtless this is the best method for that purpose. I have invariably found deep plowing on deep and rich soils to answer well. On alluvial soils, (for example, on some parts of the Mississippi bottoms,) by plowing deep, a richer mould is often turned up.

A few years since I had a piece of pasture sward turned over for a winter crop, plowed about three

inches deep, sowed, and the grain harrowed in, and bushed smooth, which produced a good crop. Another piece of similar ground, a few rods distant, was broken deep, (about 8 to 10 inches,) cross-plowed, and grain harrowed in, but the yield was not half to the former. Since that time, where the soil is thin, I guard against plowing below it; believing that the best soil is usually at the surface.

Much of our land in New-England, is too porous to oe benefitted by subsoil plowing. It is doubted whether it pays for the labor in stiff and rich lands; except for root plants. It costs more than double the power to plow twelve inches in depth, than six.

S. Tillotson.

Canton, Ct., July 20th, 1846.

AGRICULTURE.

Mr. Tucker—As a science, agriculture includes in all its branches, a knowledge as extensive, and as difficult completely to master, as many of the learned profesiions. It is a field continually open for new investigations, and within a few years, since men of learning have given their attention to it *as a science*, many are the advances which have been made towards elevating it to a standard which it justly deserves. There are doubtless many who are far excelled in some of its ramifications, but very few who have attained that perfection which places them beyond the point of being taught. It is a pursuit which offers the liberal mind opportunities for research and experiments which are denied him in almost every other branch of science. If he turns his attention to these, after much severe toil and labor, he is doomed to meet with disappointment, having learned that the perfection to which the science has already attained, leaves no room for his researches. But let him devote his enthusiastic toil to agriculture, and if he does not make some important discovery, he may go far towards arranging the thousand discordant facts which have been handed down from time immemorial.

It is to be regretted that there is not among the majority of farmers, a more inquisitive spirit in regard to the nature of the objects with which they are so intimately connected, and from which they expect to derive, not only their subsistence, but their hope of gain. The leading object of Agriculture, is to increase the quantity, and improve the quality, of the productions of the soil, and to do it with the least expenditure, or in other words, with the greatest profit, without impoverishing the soil. In order to accomplish this, we must resort to experiments, and here again opens a wide and extensive field. In consequence of the great variety of soils, experiments in different kinds, though nearly of the same nature, will not produce like results.

The leading principles of agriculture are ever the same; animal and vegetable matter, after decomposition, furnish food for plants, while heat, air, and moisture, aid in nutrition.

There is nothing, practically considered, which has done more towards improving the minds of a majority of farmers, than the circulation of a well conducted agricultural paper. It is a means, when contributed to by able and practical farmers, by which every man may derive new and useful information. Its contents are made up of the results of the most careful observation, and consists in itself of a general storehouse of knowledge from which all may draw something new and servicable. It also furnishes a common medium for farmers to communicate and receive instruction, thus enabling them to profit by the experience of each other. Among the list of agricultural papers, none rank higher (or have a greater circulation,) than the Cultivator, and it is only regretted that it does not make its friendly visits more frequently.

Middlebury, Vt, July, 1846. H. L. Sheldon.

Cut cart stakes while the bark will "run," and peel them. They are stronger and lighter than stakes with the bark on.

FARM ACCOUNTS.

Mr. Tucker—In order for a farmer to decide which are the best and most profitable crops he raises, he must keep a correct account of the debits and credits of each.

To do this, he will do well to keep a journal of daily transactions, and from that post into an account book. Something after the following manner his journal may be kept:

May 1, 1846.

Fri. Cloudy and rainy. Wind from N. E.
F. plowed ½ day in lot No. 2,..... $1.00
G. reset fence between lots 3 and 4,..... 50
Sat. Cloudy, rainy, and cool. Wind from north.
F. finished plowing for oats in lot 2, ... 1.25

The form of the Account Book or Ledger.

Oats.

		Dr. $ c	Cr. $ c
1846.	Lot No. 9. Two acres.		
April 14	To 2½ days' plowing,	5 00	
" 22.	" 5 bushels of seed, @ 40 c.,	2 00	
" "	" sowing and harrowing,	1 50	
	Lot No. 2. Five acres.		
May 2.	To 4 days plowing,	8 00	
" 5.	" 1½ " rolling,	2 00	
" 6.	" 14½ bushels seed, @ 40 c.,	5 80	
" "	" 2½ days dragging, ½ day sowing,	4 62	
	Lot No. 9.		
Aug. 20	To 2 days harvesting,	2 00	
	" drawing in, threshing, and cleaning,	4 50	
	By 100 bushels oats, @ 3s.,		37 50
	" straw,		3 00
	Lot No. 2.		
Sept. 1.	To harvesting, drawing, and threshing,	16 25	
	By 250 bushels oats and straw,		101 25
	By balance,	90 08	
		$141 75	141 75

In this manner an account of each crop can be kept, which will show the cost and profit, the lot in which it was raised, and the amount per acre; also the time of sowing and harvesting, which will be a satisfaction that will overbalance all time and trouble.

D. H. Wright.

Moscow, N. Y., May 9, 1846.

SPRING HILL PIPPIN,

Strong's Newtown Pippin, Seedling Newtown Pippin.

Mr. Tucker—About the year 1825, Judge Strong, of Long Island, planted some seeds of the genuine Green Newtown Pippin apple, from which he now has three large trees that have borne fruit for six or seven years. The fruit of all of these assimilates so closely to that of the parent tree, that it would be immediately recognized by an ordinary observer. One of these seedling fruits is remarkable for its fair and perfect form, presenting the character of an improved variety, it being of the same high flavor, and of the appearance of the finest specimens that can be selected of the old kind. The tree is also of much more vigorous growth than the old variety, which constitutes a most important improvement, as it has been a subject of regret that the parent tree is of only moderate growth, with a rough bark. To those pomologists who believe in the exhaustion of the varieties of fruits, a great relief will be afforded by the production of a new seedling Newtown Pippin. Scions for 100 trees were presented by Judge Strong, in 1845, to Wm. R. Prince, proprietor of the nurseries at Flushing, who has that number of trees growing therefrom; and the present season, Mr. P. has ingrafted and budded 500 more from the original tree. We may therefore feel assured that through the exertions and extensive correspondence of Mr. Prince, this highly estimable variety will soon become widely disseminated. The Spring Hill Spitzenburg, which is a seedling of the Esopus Spitzenburg, was also originated from seed by Judge Strong, and by him presented to Mr. Prince.

VARIETIES OF WHEAT.

MR. TUCKER—I perceive an advertisement of seed wheat for sale in your August number, upon which I wish to offer a few remarks. I think those who offer seeds of any kind for sale, should give a short description of the general characteristics of the plant. The Soule wheat is a very prolific variety—large stiff straw, more liable to blight or rust than the White Flint; shells very easy, and there is much more complaint of its being injured by the wheat worm. I think it ought to be sown only upon rather dry or rolling land. The White Flint is less liable to rust, and will not waste in harvesting, even if it stands several days after it is fit to cut.

The Mediterranean wheat is the surest wheat that is grown, and the least liable to rust; straw rather small, and is quite apt to fall. For those who wish to grow for their own domestic use, it is preferable to any other variety, because more sure of a crop, and will make more flour to the bushel. The objection to this wheat is, that the flour is of a reddish cast, and does not sell well in our market. The writer of this sent several barrels to Albany last spring, and it would not fetch within one dollar per barrel, what flour of the Whi . Flint variety brought; yet I have not the least doubt it would have made several pounds more bread than the other.

SPRING WHEAT.—I have tried the Black Sea wheat. The straw is very limber—so much so that it was impossible to cut it with a cradle; soil, sand and gravelly loam. Possibly it may stand better on a more calcareous soil. The yield, I think, will be good.

I perceive your enterprizing correspondent, S. W. Jewett, has produced, as he supposes, a new variety of winter wheat from the summer variety of Black Sea wheat. I fear he has drawn his conclusions too soon. And why? The winter of 1841 was very mild here, and hundreds of stools of the common two-rowed barley, where wheat was sown after said crop, stood through the winter, and produced fine long ears, which ripened ten days earlier than the wheat—and yet I do not think any one would think of calling it a winter variety on that account.

WAYNE.

WINTER WHEAT DERIVED FROM SPRING WHEAT.

MR. TUCKER.—In a communication from S. W. Jewett, Esq., in the August number of the Cultivator, he gives the process by which he obtained a good yield from a fall sowing of the Odessa or Black Sea wheat. In confirmation of his experiments, tending to show that it may be cultivated as a winter variety, I will state a few facts that have come within my own observation.

On the 1st of Nov., 1843, Mr. Jared Goodale sowed one bushel of Black Sea wheat. The ground froze soon after the sowing, and remained so until the opening of the spring, when the wheat came forward finely, and at harvest gave twenty-eight bushels from the one. The berry was lighter colored, but heavier than the spring sown grain.

In the fall of 1844, Mr. A. Smith sowed about two acres with the Black Sea wheat. I saw it just before harvest, and thought it promised fair for at least thirty bushels to the acre. I never learned how much it actually did yield; but will say it was such a piece as farmers might be proud to raise. Mr. Smith afterwards told me that it made superior flour. Both of the above pieces were sown with seed raised from spring sowing that season, without other preparation than is usual for common winter wheat.

In the fore part of September, 1845, Dr. D. C. Goodale, having harvested from a field of twenty-three acres a fair crop of spring sown Odessa wheat, carefully turned under the stubble, and excepting about three-fourths of an acre, for which he lacked seed, sowed the field with the Harmon wheat, as it is called with us. The seed was genuine, the Doctor having procured it from General Harmon the season before, and taken much pains to keep it pure. At harvest the part not sown was a fair growth of Black Sea wheat, somewhat uneven, as might be expected, but yielding an average of fifteen bushels to the acre. That part sown with the Harmon wheat, is about two-thirds of that variety, the remaining third was Black Sea produced from the scatterings of the first harvest.

The last I will now notice, was a small lot of an acre and a half on the farm of Ira Strong, which was of spontaneous growth, or sprung from the droppings in gathering the previous crop. The land not having been plowed, or in any way cultivated, the grain stood thin, with long heads, remarkably well filled, the straw hard and stiff, compared with the spring sown.

The foregoing, I think establishes the point that the Black Sea wheat may be successfully cultivated as a winter variety, and that it is thus improved in weight of grain and quality of flour; and farther, that the straw being more solid, it is not as liable to lodge.

J. W. STRONG.

CURING PROVISIONS.

A WRITER with the signature ZEA, gives some directions in the Montreal *Witness* in regard to curing provisions for the English market, which may be both useful and interesting. He is in favor of *dry salting*, as it is called, that is rubbing the meat with salt, instead of puting it into brine. This mode, he thinks of great importance; for he observes, "it takes away the blood, cures the meat, condenses it, coagulates the albumen, and renders it not so liable either to spoil or to become salt. Hams and bacon, it is well known, cured with dry salt, can be kept perfectly well, though not one quarter as salt as those prepared in the brine tub, indeed scarcely to to be considered as salt food at all."

The quality of salt he deems of the next consequence. The salt made in "the States," he thinks, is too often impure, though he says the manufacturer might refine it so as to be as good as any other.

Cleanliness is another point which he considers as deserving much attention. He says, "washing the meat in water before finally packing it up for sale, should never be neglected; and care should also be taken to avoid all kinds of dirt. The people of Britain, correctly enough, are very particular in this respect; they like to see the color of meat, and so, partially, to be able to judge of its quality."

Beef, he says, should be cut into six pound pieces, and pork into four pound pieces, the former to be packed in tierces of 300 pounds, the latter in barrels of 200 pounds, each containing fifty pieces. "The reason for this," it is said, "is that beef being generally served out to men at sea in greater quantities than pork, it is more convenient to have it in larger pieces, without weighing; pieces of those sizes are also more perfectly cured through than larger pieces, and when of a uniform size they pack better. The pieces of beef being larger than those of pork, it is obviously better that larger casks be employed to hold them more conveniently. Even when intended for domestic use, uniformly sized pieces are more convenient than those of various dimensions, requiring to be cut before being used, the piece left being thrown back often carelessly into the cask, and liable to get rusty in consequence."

He is not in favor of the use of saltpetre. Its only value, he thinks, is to give color to the meat. The points most deserving attention, he sums up as follows:

"*First*, The pieces must consist of, for beef, six pound pieces, and pork, four pound pieces.

"*Second*, The salt must be good, and but very little saltpetre must be employed.

"*Third*, The meat must be dry rubbed for three or four days, at least once a day, to extract a certain quantity of water, and to chemically alter the meat.

"*Fourth*, The meat must be put into pickle, so as to cure it sufficiently; in this it should remain ten days, or until it is required to be packed.

"*Fifth*, It must be well washed in water, if necessary scraped or cut.

"*Sixth*, Packed away, if beef, in tierces; if pork, in

barrels, with good coarse salt; the packages filled up with clean pickle.

"For dried or smoked meats, the dry salting alone should be employed; they will be found of a perfectly distinct flavor from those cured alone in pickle; and although slightly salted, keeping far better than provisions so highly salted by the wet process, as to be scarcely eatable.

"The use of sugar or molasses is daily gaining favor among packers; as preserving meat in a superior manner, having a finer flavor, keeping better, and never becoming rusty; and however old, never excessively salt. It has also been asserted on high medical authority, that the use of sugar in curing meat, would prevent that fearful disease sea scurvy. It has been used in curing hams for a long period, indeed a good flavored ham cannot be prepared without it; but it is of the greatest importance in curing beef, which is to be kept for a length of time, or which is required of a fine flavor.

It is used in the first process, along with the salt, for dried provisions—say one pound sugar, or one pint molasses to four pounds salt. With pickled meats, it is used in the last process along with salt, to pack up the meat in the cask, say about half of each, sugar and salt.

"As regards the kinds of beef to be packed; the best description consists of prime mess, the pieces rejected from mess causing too great a loss to the packer. The coarse pieces of the leg, which are rejected from prime mess, can be boned, dry salted, and dried; in which way they yield as good a return as the rest.

"Owing to the great local demand, the most desirable description of pork consists of mess: the rib pieces of hogs weighing over two hundred pounds should be so packed: The hams and cheeks, as also the fore part, consisting of the neck and shoulder in a piece, should be cured and dried; the fashion of removing the bones from the latter is worthy of adoption, as when the bone is left the meat is much more apt to spoil, besides being an awkward joint. Prepared this way, the pieces rejected fetch as good a price as the rest. When the pig is too small for mess, but large enough for prime, the latter should be made, reserving the hams and cheeks; if too heavy for prime, remove some of the rib pieces to add to the mess; prime mess neither suiting the British nor Canadian markets; whereas prime suits the British and West India demand better than even mess."

It is known that provisions are sometimes preserved by being packed in air-tight vessels. In relation to this process, the writer from which we quote observes:

"Provisions are preserved in many places without salt, by putting them together with water into metal cases, putting the cases into water to boil, converting the water in the case into steam, thus expelling the air, the metal case is then soldered down. Provisions thus put up keep unaltered for any length of time.

"The only objection is the expense, they having generally been prepared at places where provisions are costly, and put up in small packages. By packing where provisions are cheaper, and using large canisters, I do not see any reason why they should cost more than if prepared with salt.

"But it has often occurred to me, that the preserving of animal food might be simplified by filling up the packages with melted fat in lieu of water; that of the animal to be packed, being preferably employed, in which case wooden casks might be used, and boiling would not be necessary. The meat should be free from large bones, and immersed in hot fat long enough to expel the air, then put in a cask previously saturated, the fat poured on as filled.

"For sea use or export to the West Indies, this article would be invaluable, and would be cheaper than the usual mode of curing in inland places, where salt is expensive, as all the material required would be on the spot, the fat selling as well with the meat, as if, as usual, rendered into tallow, and for culinary purposes could be easily removed, either by exposure to the fire, or immersion in boiling water."

"In the Liverpool Times, I find the following paragraph, under the head of "New Import from America:

"'Some barrels of fresh pork have arrived at this port from America. It is preserved fresh and wholesome, by filling up each barrel with melted lard.'

"I may add, that I have since learned that many Canadian farmers keep fresh sausages all summer in the same manner."

FARMING AMONG THE HILLS.

.....

From the large number of subscribers we have in New-Lebanon and vicinity, we were prepared to expect a good degree of attention to agricultural improvement, and in this respect we were not disappointed. Our trip was made with so much haste, that we were unable to visit as many people as we would have called on; though we probably formed a tolerably correct idea of the condition of the land, and the system of farming pursued, by passing through the neighborhood; and we are free to say, that neater and better cultivated farms than we saw here, are seldom to be met with in any part of the country. We intend no invidiousness in making particular mention of the farms of Messrs. Jabez Pierce, John Murdock, Peter and Reuben Barker, and Elijah Bagg, (all of New-Lebanon,) and Roswell G. Pierce and the Messrs. Gardener of Stephentown.

Fruits.—Apples, pears and plums do well on many of the slaty hills of this region. Some years since many of the farmers, by attention to their orchards, especially to the production of winter apples, laid up money, but their children seem to have fallen into an error in continuing the old orchards, in many cases without giving them much attention, instead of setting out and cultivating young trees. The consequence is that less apples are now produced, and of poorer quality than formerly, and the farms are too often cumbered by old scraggy trees of no value. Pears appear to do well here; nearly all the trees we saw, were very heavily loaded with fruit. The same want of young trees was noticed, however, as has been spoken of in regard to apples. But as a taste for horticultural improvements is evidently increasing, we trust this defect will ere long be remedied. Mr. R. G. Pierce of Stephentown is forming a nursery of various kinds of fruit trees, and in the course of a year or two, we have no doubt he will be able to supply such as are wanted.

Under-draining.—We saw a few instances where this operation had been practised with excellent success; and we will remark, that in our opinion, greater advantage would result from a general adoption of the plan of under-draining, in this section, than almost any other mode of improvement. The land on the mountain slopes is natural to grass, when not too wet; its natural declivity is favorable to draining, and it is only necessary to take the surplus water from the surface, to make the most productive meadows. In other situations, where the soil is sufficiently exposed to the warming influence of the sun, the practice of this system will render the soil capable of yielding bountiful crops of almost every kind. We witnessed this on the farm of Mr. Bagg of New-Lebanon, and on that of Mr. Pierce of Stephentown. Will not these examples stimulate others to profit by the same practice?

Fences.—Stone walls, and what is called "half-wall," are quite common. The latter is a fence with two or three boards or rails attached to posts, so as to form the top of the fence, with stone underpinning or base. From the abundance of stone which can readily be obtained on most farms, either in loose boulders or by quarrying from the beds of rock, walls are nearly as cheap in their first cost as any kind of fence, and when properly made are no doubt the best in the long run. We noticed that Mr. R. G. Pierce had commenced enclosing his farm with capital walls. He has already several hundred rods laid apparently in the most permanent manner, giving to the farm an air of neatness, by their regular angles and straight lines, which is particularly agreeable to the eye. It is sometimes objected that walls do not form a good fence against sheep; the jagged and rough sides permitting them to climb readily to the top; but Mr. Pierce assures us that where attention is paid to lay the sides as even and true as may readily be done, sheep

will not attempt to scale the sides, and the walls form a perfectly safe fence against them.

BEES.—Considerable numbers of bees are kept in this section. The most successful cultivator of this description of stock which we met with, was Mr. NATHAN HOWARD of Stephentown. He has long studied the habits of these insects with close observation, and has no doubt obtained a very correct knowledge of their economy. He has a house of somewhat peculiar construction in which his bees are kept. It is so contrived that it may be readily closed, the light totally excluded, and yet be ventilated. The walls are double, and when it is closed, the bees are not much affected by changes in the temperature of the weather, so that they remain in a quiet or half dormant state, requiring comparatively but little food throughout the winter season. In summer it is opened, but the rays of the sun do not strike the hives. It appears to us altogether the best plan for wintering bees that we have ever seen. But we have not attempted a particular description of the house or Mr. H.'s mode of management, as we expect some details on these points from him.

NEW-LEBANON SPRINGS.—We made a short call at these springs, which seem to become every year more popular. We believe the number of visitors at the several hotels, including the patients at the Hydropathic Institution here, has averaged nearly 300 for a considerable portion of the present season. A considerable market is thus afforded for the fruits, vegetables, &c produced in the neighborhood. By the politeness of Mr. HALL, the proprietor of the Columbian Hotel, we took a look at the baths, the fountain, &c. The water is the most perfectly pure and limpid that can be imagined. It issues from the rock at the rate of from twelve to fifteen barrels per minute, and of a temperature of about 72 degrees. A bottle of this water, which we took from the fountain, is now undergoing a chemical examination by Prof. EMMONS of this city. The results of this investigation may show to what principle the beneficial effects of bathing in this water are specially attributable.

VISIT TO THE SHAKERS.

The present settlement of Shakers, or United Brethren, at New-Lebanon, was the first spot on which this sect ever located. They commenced here about forty years ago. The society consists at present of about 600 persons. more than half of which are females. From small beginnings, they have acquired large possessions, holding at this time not less than seven thousand acres of land, mostly lying contiguously. We spent a few hours examining various objects connected with this community.

Their buildings are all built in the most substantial manner, and are constructed with particular regard to convenience. One of their barns is, considered in all respects, the best contrived and most perfect of any we have seen. It is one hundred and forty-one feet long, fifty feet wide, and twenty-five feet high in the walls. It consists of three stories. The basement is devoted to the stock and the storage of vegetables in winter; the second and third to hay and grain. The main entrance for produce is in the third story, which, from the barn being on the side of a hill, is nearly level with the ground. A floor runs lengthwise through the barn, on this story, and the hay and other articles are pitched downward into the bays on each side. The barn is capable of containing two hundred tons of hay, and it is so disposed that scarcely any of it has to be raised higher than the wagon from which it is thrown. Only two hands are necessary to unload—one to pitch off, and one to keep the mow level, thus saving a great amount of labor compared with what is required in barns of common construction.

The apartments for the cattle are complete. The walls which are of very solid stone-work, are plastered, and though cool in summer, we should suppose they would be so warm in winter that no frost would be found there; windows in each side permit free ventilation. The fodder is thrown into racks for the stock, from the "feeding floor" in the second story. In front of the racks are mangers to catch any straws that drop from the racks, as the fodder is pulled out by the animals. An open space is left between the racks and mangers, which allows the animals ready access to fresh air, prevents the hay in the racks from being made unpalatable by their breath, and gives room also to slip in boxes when it is wished to feed with slops or roots. The man who had charge of the stock, said he could feed and take care of a hundred animals in this barn with less labor than he could manage twenty in any other barn he ever saw. The cattle stand on a platform with a gentle slope, which renders it easier to keep them clean and dry. The cows are tied by chains around the neck, and are always milked in their stalls summer and winter. They are milked exactly at fixed times. So punctual are the attendants to this, that a clock is kept in the apartment, and the herdsman told us at what moment the cows would be in their places.

The barnyard is so contrived that none of the manure is wasted. It is kept littered with straw and such waste matters as can be procured, and the manure from the stalls is made into compost with that in the yard, mixed with muck, and is not used till it has become fine by decomposition.

NEAT STOCK.—The cattle kept here are nearly all crossed with Short-Horn blood, and some are purely of this variety. Some years since a bull and three cows were procured by this community from their brethren near Lebanon, Ohio. They were of the Short-Horn stock imported into Kentucky by LEWIS SANDERS and others, commonly known as the importation of 1817. The descendants of the animals procured from Ohio are still kept. About twenty years ago, the society hired for one season GORHAM PARSONS' imported bull Fortunatus or Holderness.* This bull was no doubt of the same breed as the animals of the Kentucky importation of 1817, they having been all procured from the same section, the banks of the Tees in England. The two branches of this stock, that derived from Kentucky and the bull Holderness, have here been bred together, and the stock thus produced exhibits quite an uniform character. They are generally large, tolerably well shaped animals, but rather heavy in bone, and somewhat coarse-fleshed. Some of them have the appearance of great milkers. We were told that the progeny of Holderness were generally superior for the dairy. We believe this to have been true of his stock generally, and he was used for a long time and in many neighborhoods, in different parts of Massachusetts, Connecticut, and finally in Western New-York. The society here have many of the second generation, which show strongly the characteristics of the old bull, and it is only a year or two since they sent a cow to Virginia, which was one of his immediate offspring. Several members stated that Holderness was of more value to them than any other bull they had ever used, and that they would gladly give a large price for another of the same stock or similar character. Some crosses with the Ayrshire breed have lately been introduced. They are considerably smaller than the other stock, but it does not yet appear that they have any particular superiority for any purpose. A longer trial may, however, more fully develope their qualities, and induce a more favorable opinion of them. The cattle are all in fine order and show that they are properly cared for.

DAIRYING.—The manufacture of butter and cheese is only carried on to the extent demanded by home consumption. Cheese was formerly produced for sale, and of such quality, that it commanded (when old) from twenty to twenty-five cents per pound. The same system of manufacture is still pursued. The different dairy apartments were shown to us, and all information in regard to the various processes and management cheerfully given. The buildings appropriated to this branch of business are rather small. They were erected soon after the commencement of the society, and are less convenient than most of their modern structures are; it is, therefore, designed to supply their place by a new edifice, to be constructed on the most approved plan. The

* For a history of this animal, see Cultivator, for 1845, p. 349.

several rooms for milk, butter and cheese, are kept with most scrupulous neatness. Not a fly or any other insect, nor even the least *speck* of dirt could be here discovered. The cheese-room was cool and airy; the windows of which were protected by gauze screens, and the temperature kept low by wetting the floor with cold water. After the cheese is properly cured in this room, and before the weather has become so cold as to make it liable to freeze, it is removed to a room in the cellar or basement of the house. Here the temperature is nearly the same, about 45 degrees at all times. It is kept here for any length of time, and improves with age.

Economical arrangement.—The cellar just mentioned, (which, by the way, is so cold that no ice-house is ever needed,) belongs to the house of the principal or senior family. On signifying our wish to see the arrangements for culinary purposes, two of the females at once accompanied us to the kitchen, and kindly showed us the admirable fixtures, and explained their various uses. It would be useless to attempt a minute description of all the labor-saving contrivances which are here secured. We have examined similar departments belonging to various large establishments, but have never seen such perfect conveniences as there are here, and we knew not which most to admire, the skill and ingenuity evinced in the original design, or the neatness displayed in their use. A view of this beautifully clean kitchen, and the systematic and quiet manner in which operations are here conducted, is a sight worth seeing. The cooking for a family of some 300 persons is here done with less labor than is usually required for thirty.

Sales.—A large portion of the sales of the society consist of dried herbs, extracts, and the seeds of vegetables. Some fifty to sixty acres of land are devoted to the production of these articles. The amount of sales, or the nett profits of the business we did not learn. The cultivation of their herb and vegetable gardens, as well as their fields generally, is very neat. The herbs and other preparations are put up in the best manner, and are sold by established agents in the large cities, and also by travelling agents over a large portion of the country. We noticed a press used for pressing herbs, which appears to possess some important improvements. It was invented by a young man belonging to the society, and we believe he has secured a patent for it. We hope he will furnish drawings and a description of it for insertion in our columns.

We are well aware that many of the improvements of which we have spoken, cannot be so readily or advantageously carried out on common farms or individual estates, and we do not bring them forward as deserving universal adoption; but we do think that *something* of the system, which is here observed in conducting business, might be profitably imitated by many of our farmers. Above all we do not hesitate to recommend, both to husbandmen and housewives, the shakers' examples of neatness and cleanliness, the imitation of which we are sure would result in the increase of comfort and happiness.

Wild Geese.—On the premises occupied by one of the families of Shakers, we saw the largest flock of these birds we have ever seen in a domestic state.* There were about forty in number, all of which and about as many more, which have been sold, sprung from one pair procured about twenty years ago. The man who has charge of them, Daniel Hawkins, gave us some facts in regard to their habits which were new to us, and may be worthy of note. It is known that wild geese do not breed till three years old; but friend Hawkins states that they always mate in the fall, preceding the spring when they are to breed. He states that the new pair selects the site for its future nest in the fall soon after mating, and that they carefully guard it ever afterwards till the young brood is brought off. The ganders appear to be strict *monogamists*, choosing but one female, and adhering to her with the strictest fidelity till death or force separates them. This seems to be their natural state, but we cannot say that the male would not unite with more than one female, where the number of the latter was greater than the former.

This family of geese furnish an example of "in-and-in" breeding. In discussing this subject in a former article, we stated that aboriginal or pure races of animals were not known to degenerate from this course of breeding. Friend H. informed us that the original pair of geese from which these have descended, belonged to one brood; they were therefore, of precisely the same blood, and their offspring to this time, have been produced by the strictest in-and-in breeding. But have they degenerated? is the question. Not in the least degree, so far as can be discovered. They breed as well as they ever did, and the young are as large, as hardy and as perfect as the old stock were.

These geese, besides being a curiosity and an ornament to a place, are thought to be quite as profitable as any. It is said they have more and better feathers; they are heavier and more hardy. Friend Hawkins informs us that the female lays from three to five eggs the first breeding season, or the spring they are three years old, and after that an average of about seven. All the eggs generally hatch, and the young are almost sure to grow up. Their growth is surprisingly rapid, reaching nearly their full weight, as friend H. states, in about eight weeks. This quickness of growth admits of their being reared, in their wild state, within the short summers of the polar regions. During incubation, the gander watches the nest night and day, and will peril his life in defending it against all intruders. He manifests as much affection for the young as the mother, and is even more assiduous in providing for them. He always endeavors to induce as many of the young as possible to place themselves under his care. In this way the strongest ganders often get away the young belonging to others. The first gander of this flock was kept over twenty years, and he always acted in the capacity of a patriarch to all his posterity—none in the flock refused to yield to his authority, and he availed himself of what he appeared to think was his right, in taking charge each season of several broods of young.

* We noticed also a fine flock of these geese on the farm of Samuel Perry of New-Lebanon.

SCIENTIFIC FACTS.

Nitrogen.—Wheat exhausts soils, because it derives therefrom the large quantity of nitrogen which the grain contains; but it is this same quantity of nitrogen which renders it more valuable than other grains. Tobacco exhausts powerfully the soil, because it requires an abundance of nitrogen to form its nicotine; but on this principle its value in market depends. To produce indigo, nitrogen must be supplied to the plant by an abundance of rich manure; no crop is more exhausting; but without the nitrogen no coloring matter could be formed. The value is in proportion to the cost; and the success of the cultivator depends on the skill with which he turns the nitrogen of waste and valueless substances into those of high price in market.

Blood.—Blood examined under a microscope, is found to consist of minute red particles, floating in a nearly colorless liquor. These red particles, in human blood, are from one four-thousandth to one eight-thousandth of an inch in diameter. In most other animals they are larger.

Preserving Animal Substances.—Putrefaction requires the presence of water; hence, by drying animal substances, they are preserved. Hence one reason of the preserving power of salt, from its strong affinity for the water contained in these substances. Alcohol operates partly in the same way. Various other substances act by entering into combination, and the divellent tendencies of the affinities of the constituents of those substances are overcome; among these are corrosive sublimate, copperas, tannin, wood vinegar, and kreosote. A high temperature stops putrefaction by coagulating the azotized materials. Putrefaction is impossible above 182° or below 32°. Freezing acts precisely as drying. Hence bodies preserved by frost, and those which remain fresh for years after death on the Arabian deserts, are preserved from the same essential cause.

AMBER, according to scientific authority, is the turpentine of unknown trees belonging to a former geological epoch.

BUTTER.—This substance is a mixture of six different fats, viz., common stearine, margarine, and oleïne, with butyrine, capröine, and caprine. Keeping butter after melted, at a temperature of 68° for some days, the stearine and margarine crystallize, while the other remains liquid. Oleïne is separated by solution in alcohol; the others by successive solutions in the same, as they possess different degrees of solubility, but have not been obtained pure.

COLORING MATTER OF PLANTS.—The green color of plants is due to the presence of a substance termed *Chlorophyll*. But so excessive is its coloring power, that even very deeply colored plants contain very little of it; and Berzelius calculated that the entire mass of leaves of a large tree seldom contains ten grains of this substance. Its composition has not been fully ascertained, though it contains no nitrogen. The coloring matter of flowers, from its very minute quantity, it is almost impossible to examine.

KREOSOTE.—This is the antiseptic principle in pyroligneous acid, and in the smoke of burning vegetable substances. Its most remarkable property is, that it coagulates albumen and the coloring matter of the blood, and these bodies are then no longer susceptible of putrefaction. Fibrine, or muscular flesh, immersed in a solution of kreosote for some minutes, has no tendency to putrefy even if exposed to the heat of the sun. Kreosote has a similar action on vegetable substances; hence fence posts, immersed in pyroligneous acid, are rendered very durable.

COCOA-TALLOW.—The albumen of the cocoa nut contains a solid fat, which is extracted from it, and used in the manufacture of candles. It is a mixture of ordinary oleine with a stearine, which contains a peculiar acid, called cocoa-stearic acid.

NUTRITIVE VALUE OF FOOD.—Boussingault has shown by experiments, that in herbivorous animals, the total quantity of nitrogen assimilated for the growth of its muscular and other tissues, is derived from, and equal to that contained in the vegetable substances used as food; and that hence, to ascertain the nutritive value of any organic substance, it is only requisite to determine the quantity of nitrogen it contains. A table is given in No. 12 of the last volume of the Cultivator, exhibiting the agreement of theoretical results thus derived, with those of many experiments directed by enlightened agriculturists.

SOURCE OF NITROGEN.—Plants vary exceedingly in the facility with which they derive nitrogen from the air, whether by direct absorption of the gas or as ammonia. Thus some species of *Trifolium*, or trefoil or clover, thrive nearly as well when placed in pure sand, and supplied with air and water only, as when sown in ordinary soil; but on the contrary, wheat grows but slowly under the same circumstances, and makes no attempt to flower; and on analysis, the whole plant is found to contain even less nitrogen in actual quantity than had originally existed in the seed. Wheat, therefore, has no power to absorb nitrogen from the air, while trefoil possesses that character in probably its greatest vigor. But fully grown wheat is rich in nitrogen; its seeds contain more gluten (which consists in part of nitrogen) than that of any other grain. Wheat derives its nitrogen from the soil; clover, trefoil and peas, mainly from the air. Hence, a crop of wheat containing a hundred pounds of nitrogen, exhausts the soil much more than a crop of clover containing a hundred pounds of nitrogen. Hence also the eminent utility of clover as a green crop to precede wheat; it draws wealth from the air, and reduces it to a shape in which wheat can use it.

NITROGEN IN A CROP OF HAY.—Hay contains usually about 1½ per cent of nitrogen, or a ton contains 30 pounds. A good meadow, therefore, yields about 60 pounds of nitrogen per acre per annum.

ANIMAL HEAT.—The source of animal heat has greatly puzzled philosophers. It appears to result mainly from the conversion of carbon into carbonic acid, by the union with oxygen in respiration, on the same principle that heat is developed in slow combustion. This is proved by the fact, that the temperature is highest in red-blooded animals, and in the same animal at those periods when the circulation is most rapid and the quantity of air consumed the greatest, as in running or hard exercise. Only eight-tenths of the animal heat can be accounted for in this way; that is, the combustion of a given quantity of carbon is found to produce only eight-tenths of the heat of the body, during the consumption of that quantity in respiration. The rest must therefore be attributed to some action of the system itself.

GASTRIC JUICE.—The singular solvent energies of gastric juice has led to much inquiry as to its composition. It is specially characterized by a mixture of a quantity of free muriatic acid, with some salts But if we form artificial gastric juice, by mixing together the muriatic acid and the salts in the proper proportions, it is found totally incapable of dissolving the materials of food, as in digestion. The organic material of the gastric juice, though in very small quantity in any case, is wanting; but all the solvent powers of the natural juice may be at once conferred upon the artificial, by the addition of a very small quantity of the mucus of the stomach.

PERSPIRATION OF PLANTS.—Dr. Hales planted a sunflower 3½ feet high in a garden pot, which he covered with thin milled lead, cementing all the joints so that no vapor could escape, except through the sides of the pot and through the plant itself; but providing an aperture, capable of being stopped, through which the earth in the pot could be watered. He found, in fifteen days, after making all necessary allowances for waste, that this plant, 3½ feet high, and with a surface of 5616 square inches above ground, had perspired in twelve hours of a dry warm day, 30 ounces; on another day less dry, 20 ounces; on a dry warm night, without dew, 3 ounces; and on a night with some dew, nothing. When there was rain or copious dew, the plant absorbed two or three ounces.

FORCE OF SAP.—Braddick, a British physiologist, cut off the stem of a grape, five years old, and covered the wound with a piece of bladder, secured by cement and twine. The bladder, although at first drawn very close to the top of the shoot, soon began to stretch, and to rise like a ball over the wound, and feeling as hard as a cricket ball. In about 48 hours afterwards the force of the sap burst the bladder.

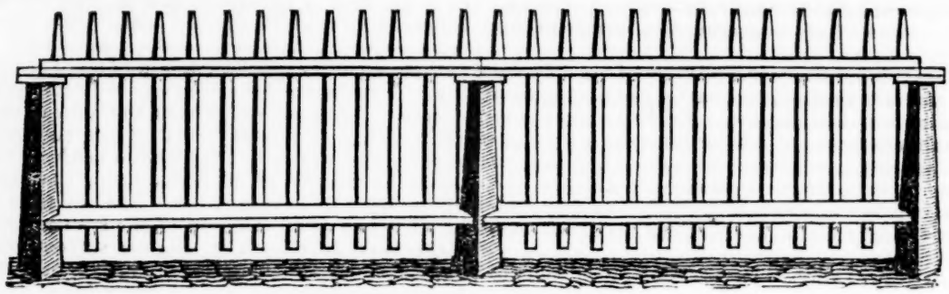
CENTURY PLANT.—The American Aloe, or *Agave americana*, is popularly supposed to flower only when a hundred years old, whence its name. But if subjected to the best treatment, it will flower in thirty years; on the other hand if badly managed, it will *not* flower in a hundred years.

DIFFERENCE IN TEMPERATURE FOR PLANTS.—Some tropical plants do not flourish and perfect their fruit in temperate climates, even if kept in the warmest hothouses the year through. On the other hand, Von Baer found *Ranunculus nivalis* and *Oxyria reniformis* flowering in Nova Zembla, where the soil was not warmed above 34½ degrees; and in Jakutsk, Erdman states that summer wheat, rye, cabbages, turneps, radishes and potatoes, are cultivated, although the ground is not thawed in summer more than three feet in depth.

FROST IN VALLEYS.—Professor Daniel states, that he has seen a difference of 30°, on the same night, between two thermometers, placed, one in a valley, and the other on a gentle eminence, in favor of the latter.

ADVANTAGE OF GARDEN IRRIGATION.—Professor Lindley says, that mildew, often produced by dry air acting upon a delicate surface of vegetable tissue, is completely prevented in annuals by very abundant waterings. The ravages of the *Botrytis effusa*, which attacks spinach; of *Acrosporium monilioides*, on the onion; and the mildew of the pea, caused by the ravages of *Erisyphe communis*, all minute parasitic plants, may all be stopped or prevented by abundant watering in dry weather.

RICE PAPER is not prepared from the rice grain, but is the production of the *solah*, an aquatic plant which grows profusely in all the marshes of China.



STEVENS' PATENT FENCE.—Fig. 84.

Joseph Stevens, of Northumberland, Saratoga Co., N. Y., has lately obtained a patent for an improvement in fences. The manner of making this fence is described as follows:

The posts are made of the same composition as common brick, being burnt or baked to the consistency of a hard, arch brick. They are set in the ground diagonally or cornerwise; a tenon is made on the top of each post, on which is placed a coupling block for the top rail to rest upon, and fastened to it by a pin or nail, which unites the whole fence firmly together; the bottom rail is notched at each end, so as to embrace the posts firmly, and is supported by the paling or pickets. It will be seen that in this mode of construction, there are no tenons in the rails, thus preventing rot or decay in the wood part.

This fence has been erected on the premises of Mr. Finney, of Northumberland, and it is said to be highly approved by him and all others who have seen it.

In no department of husbandry is improvement more needed than in fences. The above mode appears to possess the advantages of durability and ornament. The inventor believes, also, that this fence can be constructed as cheap as the ordinary kind, and this fact taken in connection with its acknowledged durability, must be a strong recommendation.

EXCITEMENTS—BERKSHIRE HOGS, &C.

A few years ago, the Berkshire breed of hogs was pretty generally disseminated through the country. Quite an excitement was got up in relation to them, and for a time it seemed almost impossbile to obtain a sufficient number to supply the demand, although frequent importations were made from England. They were sold at such high prices that a few individuals made large profits by the breeding and sale of them. From twenty-five to fifty dollars for pigs of three months old, and from one hundred to two hundred, and in some instances even three hundred dollars each, for grown hogs, were obtained. It was easy to see that the profits of raising hogs for pork, however good might be the breed, would never justify such prices. But there was a diversity of opinion as to the real merits of the Berkshires compared with other breeds. For a time, however, the tide continued to set strongly in favor of the Berkshires, and either for the purpose of participating in the speculation, or with a view of giving them a fair trial, they became extensively adopted.

The writer of this article, was one who believed that the Berkshires, in their "palmiest days," were overrated, when compared with several good breeds. At the same time it is proper to state that he believes they are now in many cases, estimated as much too low as they formerly were too high. It must be admitted that their reputation has greatly fallen, if, indeed, it is not now entirely the reverse of what it was five or six years ago. But the change of public opinion in this instance, is only another evidence that excitements are followed by re-actions, and that in the two extremes of opinion, truth is seldom found. It is not always easy to induce people to judge a thing by its own intrinsic merits; there is frequently a tendency to exaggeration; some are disposed to place an undue value on a favorite object, while others, disgusted or provoked, as it were, by the enthusiasm or infatuation of their neighbors, run directly into the opposite extreme, and refuse to concede merit where it is really deserved.

A striking instance of the false estimate of an article, in two respects, was furnished a few years ago, in the somewhat famous "Chinese Tree Corn." This corn was first described as having a peculiar habit—"growing like a tree," and "producing its ears on the ends of the branches." It was withal represented as an "uncommonly early" corn. It was sold at twenty-five cents an ear over the whole country. The people generally were disappointed in regard to it. At the north, it was found a *late ripening* kind, compared with the kinds commonly cultivated, and it was not, therefore, adapted to this region; while its habit of growth was every where different from what was expected from the description first given. In consequence of this the article was pronounced a "humbug," and condemned—not in all cases because it was unworthy of cultivation, but because it was thought not to correspond with the representation which had been given of it. It was not, it is true, adapted to those sections where a *very* early kind must be grown; but as far south as forty degrees, it is known to have succeeded well. On soils of medium quality, it would out-yield most varieties. It also made the best and sweetest meal; and the crop would turn out the greatest quantity of fodder, and of the best quality, (owing to its abundance of soft leaves,) of any corn known. All this can be verified by the testimony of persons who, like the writer, have given this corn several years' trial.

Now the point we wish to make appear, is, that exaggerated statements of the value of an article, tend ultimately to an undue reduction of its value. We could cite other instances in proof of this. The Merino sheep, from having been sold soon after their introduction to this country, for from one thousand to fifteen hundred dollars per head, during the reaction which followed, fell down in price to less than *two* dollars per head; though such was the prejudice against them, that few buyers were found at that. It required many years—after the days of speculation were over, and fortunes had been made and sunk—for the equilibrium to be restored, and a true standard of value established for these useful animals.

And has not the value of the Berkshire hogs been unjustly depreciated from causes similar to those abovenamed? We admit there are breeds which are equal and in some respects preferable to the Berkshires—and this, in fact, has always been our opinion—but at the same time, the Berkshires are far superior to a large portion of the hogs which have been, and still are kept in various portions of the country.

The objections which we have heard against this breed of hogs may be thus enumerated. 1. Their color is black. This we believe is the most common objection in this section. 2. They are too small. 3. They have too much lean in proportion to the fat. 4. Their flesh is coarse grained.

As to color, we do not see why black is not equally as objectionable as any *other* color, and we cannot discover any *reason* for its being more so. It is all a matter of fancy whether we choose black, white, or *green*.

As to size, from the origin of the present breed of

Berkshires, it results that some would be too small for certain purposes. They have been derived by various crosses of the Siamese and other small Asiatic varieties, with the old English Berkshire. From this mixed origin, it follows that the stock run larger or smaller in proportion as they have more or less of the blood of the small or large breeds from which they sprung: or they will vary in size according to the designs and skill of the breeder. But want of size cannot certainly, be applied to all the Berkshires bred in the country. Numerous cases could be given where they have weighed from five to seven hundred pounds, dressed. We know of specimens of the breed now, which, if fatted, would weigh that, and if this is not size enough, we don't know what would be had. But we may here mention, that when carried to the south and south-west, the stock seems to have, from the nature of the climate, a tendency to degenerate in size and constitution.

As to the objection that they have too much lean in proportion to the fat—we believe the breed in general is inclined to make flesh rather than fat; the Berkshire, in all his variations, seems to be characteristically a *lean-meated* hog, compared with most breeds; his carcase may be said to be made up as the Paddy wished his pig to be, "with a strake o' fat and a strake o' lean." This quality may be *really* objectionable to the packers, who wish to get from a hog the greatest possible amount of "clear" pork; but it is not always a fault. For eating fresh or making bacon, it is far more palatable than that which is clear fat.

But this tendency to lean in the Berkshire hog is not without its advantages in other respects. It assists the constitutional hardiness of the animal, and gives him a muscular vigor which enables him to protect himself, or, as the expression is, to "cut his own fodder." These qualities have proved in many cases of great advantage in crossing the Berkshire with other breeds; particularly in giving "form and comeliness," and constitution, to the pot-bellied, blubbery stock, which were kept in some neighborhoods.

But the lean-making tendency should not be carried to an extreme, as it has been, for instance, in the "pumpkin buttocked" cattle, and as it may have been in *some* Berkshires.

The objection of coarseness of flesh, as stated in the last place, we think applicable to a portion of the Berkshires, but by no means to the whole. The large, pendent eared, coarse bristled class, which some persons have so much admired for their enormous size, we believe are obnoxious to the charge. At least we know that several we have seen dressed, were faulty in this respect, and we have frequently heard the same complaint in relation to others But we believe this objection is confined mostly to the big 6 and 700 lbs. hogs; and such we do not think profitable, or suitable to be recommended. They neither fatten as readily, or make as good meat, as those of medium size.

To sum up the matter, the very largest Berkshires, as just observed, are too coarse. Those which have the most of the Siamese blood, and such as, in breeders' phraseology, have been "bred too fine," have a tendency to barrenness, and are too small except for killing before they are six months old. The medium sized, soft haired, thin skinned kind, such as when fattened at a year and a half old, will weigh an average of 250 to 300 lbs., are easily kept, are thrifty and prolific, and make very good meat for eating fresh, or for ordinary family use.

The fact is, that the wants of the community, in relation to pork, can be best supplied by two descriptions or classes of hogs; one for supplying the market with meat for eating fresh, and for affording fine, delicate meat for families; the other for making heavy, fat pork for barrelling, &c. This is so well understood in England, that separate premiums are there given for the two classes, at nearly all the shows.

In our next we propose to make some farther remarks on this part of the subject, and shall speak more particularly of the breeds best adapted to the purposes here mentioned.

RURAL CONVENIENCES.

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We lately had an opportunity of visiting, on the same day, the farms of two very intelligent cultivators, both remarkable for the ingenuity and skill displayed in the arrangement of the out-buildings, and in labor-saving machines. A short account may be interesting, and perhaps useful to our readers.

One of these was the farm of Dr. Wm. D. Cook of Sodus, Wayne Co. N. Y., consisting of about two hundred acres of land. The buildings are a neat and substantial house, workshop, root-cellar, wagon sheds of large size, large carriage-house and horse-barn, corn-crib, and a barn 60 feet by fifty, with additions. The house has a fine cellar, with a hard and smooth water-lime floor. The sides of the cellar are plastered five feet high with water-lime, totally excluding rats and water, and rendering the drain, formerly in use, entirely unnecessary. The cellar contains an excellent hot-air furnace, which, with one fire, not consuming more wood than an ordinary fire-place, warms five rooms and a hall. There is an oven immediately over the stove of the furnace, which bakes well whenever the furnace is in operation.

The ruta-baga cellar is under the tool-house and work-shop; it will hold upwards of fifteen hundred bushels, and is filled by dumping the cart through a hole above, provided for that purpose.

Attached to the barn is a building containing a fixed horse power. This building is thirty feet square, and contains an inclined tread wheel twenty-eight feet in diameter, which varies five feet from the plane of the horizon. The horses move it by their weight alone, and need no harness. It has been in operation five years, and in no part has given way, or yielded in the least. When disconnected with the threshing machine, it runs with the weight of a small boy. A *brake* stops it almost instantly in case of accident. With the building containing it and its appendages, it cost $300. The threshing machine has an admirable elevator attached, which raises the straw ten feet higher than the machine, and drops it at a convenient spot, saves the work of four men needed by the ordinary method, and is so constructed that it is totally impossible to throw out a single grain with the straw. It is on the principle of a row of *double rake heads* revolving together, and working all in the same direction.

A clover mill of Burrall's construction, (costing $55) is connected with the horse power, which cleans from five to six bushels of clover seed per day.

An excellent straw-cutter is also attached, and all the corn stalks are cut by horse power; and on being brined, the cattle eat them wholly. Nearly all the hay is chopped, and all the refuse hay left in mangers is thus converted into excellent food when mixed with grain or meal, and is all eaten.

A part of the barn cellar is occupied as cow-stables, and a part with a continuation downwards of the bay for hay and unthreshed grain. This bay is thus made so capacious, that it has at one time held thirty tons of hay, under three hundred bushels of grain in the straw.

The other farm visited was that of Joseph Watson of Clyde, N. Y.; a neat farm of 48 acres, lying on the Clyde river. It is well laid out in two lines of square lots, one on each side of a central lane. The out-buildings nearly enclose a barnyard, which during summer, is kept nearly as clean as a gravel walk. The buildings are of cheap construction, but very neat from cleanliness and internal arrangement. The barn contains a fixed horse power, by a rope running on the outward ends of radiating arms, the whole cost being only a few dollars. This drives a two-horse thrashing machine, a grindstone, a circular saw for cutting wood and for slitting pickets, a small mill for grinding horse feed, and a small grater-mill for making cider for vinegar, apple-sauce, &c. All these contrivances are good, neat and cheap, and therefore well adapted to the wants of the small farmer. Two horses being needed on the farm, much work is thus done by them when their labor is not otherwise needed, and no additional expense of hir-

ing horses and men for large machines. There is a general exemplification throughout of the old rule, "A place for every thing, and every thing in its place." The proprietor does nearly all the work on this farm with his own hands; and after what has been said, he takes and reads an agricultural paper—the Cultivator.

MR. NORTON'S ANALYSIS OF OATS.

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Mr. Editor—Having read with some attention the very excellent paper on the analysis of the oat, by which Mr. J. P. Norton, (recently appointed to fill the new professorship of Agriculture, in Yale College,) won the prize of fifty sovereigns offered by the Highland Agricultural Society of Scotland, I was much struck with the confirmation which the various tables of constituents of the straw, the husk, and the grain of this plant gives to the well known fact that oats grown on stony ground are much superior to those grown on any other kind of soil. This analysis also confirms in some degree an opinion expressed in a former number of this volume, that food containing much oil was necessary for a good development of muscle, or that men and animals were able to do the most work when fed on aliment containing oily or fatty principles. In proof of this, Mr. Norton has found in the grain of the several varieties of the oat which he experimented on, from 5.44 to 7.38 per cent. of oil, nearly equalling in this respect, the quantity contained in the most oleaginous of farinaceous grains, Indian corn, which, according to Boussingault, contains 7 per cent., and according to Liebig, (whom I do not repose confidence in relative to this grain,) only 5 per cent.

It is well known also that potatoes owe their value as food, whether for man or cattle, to the starch which they contain. Oats appear also to derive much of their value from the same source, the grain containing a little over three-fifths or 65 per cent. of starch. But it is the analysis of the inorganic part of the oat which is of the most consequence to the farmer should he wish to make use of science as an aid to agriculture. There are many sections of the country, where it has been as yet impossible for the farmer to grow as heavy a crop of oats on his good rich ground as he could on that which was poorer, owing chiefly to want of stamina in the straw to support the head when fairly loaded; heavy oats, when not grown on stony ground, generally *lodging* long before coming to maturity, thus rendering the crop light and of little value. This analysis shows how the defects arising from these causes may be partially remedied. For instance, the full grown plant is divided by Mr. N. into seven parts, viz., the grain, the husk, the chaff, the leaf, the top-straw, middle straw, and bottom straw, all yielding a different amount of ash, and the same kinds of oats growing on different soils varying from each other in this respect, thus proving that the soil exerts a most powerful influence on the whole body of the plant. The following table will show how well in this instance science agrees with popular opinion:—

	Grain.	Husk.	Chaff.	Leaf.	Top Straw.	Middle Straw.	Bottom Straw.
Sulphuric acid,	....	9 61	5.32	14.80	16.33	18.45	13.29
Phosphoric acid.	49.19	1.04					
Chloride of sodium,	0 35	0.24	5 11	2 29	3.13	3 03	15.36
Phosphates of lime, magnesia, and iron,	....	....	5.84	6.13	2.84	3.03	0 78
Potash, Soda,	21.56	10 26	7.96	11 89	19 09	21 80	43 17
Lime,	5.32	1.95	4.53	6 99	7.02	7 23	6 06
Magnesia,	8.69	0.38	1 84	2 55	2 84	2·91	2.07
Peroxide of iron.	0.88	1.58	0 24	....	0.30	1.40	0.61
Peroxide of manganese,	....	0.92					
Soluble silica,	0.89	4.46	11 99	5.90	5.13	7.34	5 03
Insoluble silica,	0.98	68.39	56 05	45 75	43.31	33.14	12 25
	97.86	98.83	98 90	99.30	99.99	98.33	98.35

In this, the silica, the element which enters largely into the formation of all kinds of stone, is shown to predominate in every case, with the exception of the grain and the bottom straw, in the former of which, the phosphoric acid and potash are predominant, in the latter the potash.

A curious fact is also noticed in the following table, and which is well worthy of attention, to wit:

	July 2.	July 9.	July 16.
Potash and Soda,	32.92	31.31	31.37
Chloride of Sodium,	10.37	8.10	0.61
Lime,	2.70	5.40	6 76
Magnesia,	3.44	4.52	2.94
Oxide of Iron,	0 39	0.21	0.35
Sulphuric Acid,	10.35	12.78	16.42
Phosphoric Acid,	14 02	20 09	15.19
Silica,	24.40	17.05	26 05
	98.59	99.46	99 69

that in the early period of the growth of the plants, chloride of sodium or common salt enters into its composition as one of its constituents in so large a proportion as one-tenth, while it nearly disappears at the time when the grain is about to form. From these facts put before us in relation to this plant in such plain and indisputable figures, it might be concluded that on those soft loamy soils, which contain little gritty matter, a heavy top-dressing of a compost made of the scrapings of streets of towns, a few bushels of lime and leached ashes together with a small proportion of salt, spread on and harrowed in at the time the oats are sown, would amply repay the expense and trouble of its application, and might perhaps enable some of the incredulous themselves to grow a few of those 80 or 120 bushel crops, that bear off the prizes from the State Agricultural Society every season. Do you not think so? J.

P. S. The prize offered by the Highland Society of Scotland, having drawn out such an able paper on the staple grain of that country, would it not be proper for the society of this state, which undoubtedly now has ample means, to offer at least as valuable a prize for the best paper on the analysis of Indian corn, inviting foreign as well as our own chemists to compete for it? There can be little doubt but an analysis of corn conducted in the same manner as that of Mr. Norton's on the oat, would develope some highly useful facts, which would have an economical bearing on the culture of one of our favorite crops, especially when it is considered that statements have been made, that more of that necessary of life, *sugar*, may be procured from an acre of corn, properly grown for that purpose, than from an acre of sugar cane!

The following beautiful ode was composed for the annual celebration of the Berkshire (Mass.) Agricultural Society, in 1823, by William C. Bryant, Esq. It may be new to some of our readers.

.....

Far back in the ages
The plow with wreaths was crown'd,
The hands of kings and sages
Entwin'd the chaplet round;
'Till men of spoil
Disdain'd the toil
By which the world was nourish'd,
And blood and pillage were the soil
In which their laurels flourish'd.
—Now the world her fault repairs,
The guilt that stains her story;
And weeeps her crimes amid the cares
That form'd her earliest glory.

The proud throne shall crumble,
The diadem shall wane.
The tribes of earth shall humble
The pride of those who reign;
And war shall lay
His pomp away;
The fame that heroes cherish,
The glory earn'd in deadly fray,
Shall fade, decay, and perish.
—Honor waits, o'er all the earth,
Through endless generations,
The art that calls the harvests forth,
And feeds the expectant nations.

THE HORTICULTURIST,

AND

JOURNAL OF RURAL ART AND RURAL TASTE.

.....

Our readers are aware that the publication of a work with this title, under the editorial charge of A. J. Downing, Esq., was commenced by the publisher of the Cultivator in July last. Three numbers of the work have, therefore, been issued; and the number of subscribers it has already received, now about 2,000, is a satisfactory proof that it meets with the ready approbation of the community. Less than this indeed, was scarcely to have been expected, when we consider the popularity of the previous writings of the editor, particularly his works on "Landscape Gardening and Rural Architecture." and "Fruits and Fruit Trees of America." A taste for horticultural improvement is rapidly increasing in this country. This is obvious from the great increase of nurseries. A few years ago, it was feared by some, that competition in the raising and sale of trees would ruin the business; but the demand has actually outstripped production, and from present appearances is likely to continue in advance.

We propose to notice briefly some of the principal articles which have appeared in the publication above named.

The second article in the first number of the Horticulturist, is placed under the head of "Notes on a few Fruits of Superior Excellence." It is written by the Editor. He remarks that such has been the number of new fruits that have been lately introduced into our gardens, that it is not easy to decide which are the best. He observes that—"There is a large class of very fine fruits which have only a *local* value. They belong," he continues, "to a certain small district where they have originated, where their qualities attain their highest perfection, and beyond which they deteriorate." Among such he reckons the Newtown Pippin and Esopus Spitzenburg. These apples, so highly valued here, he states become so changed when transferred to other sections, that in New-England, and at the south

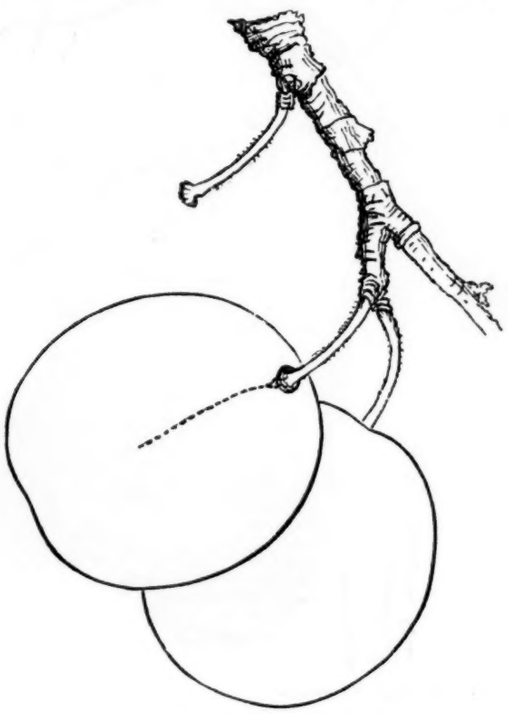


Fig. 81.—*The Imperial Ottoman Plum.*

and west, "they are scarcely the same fruits." The writer observes, however, that—"there is a small class of fruits which seem to have a capacity of adaptation that fits them for soils and exposures of almost every character. Hardy, uniformly productive and thriving in almost every tolerable soil, they become sources of profit to the orchardist, and of continual enjoyment to the possessor of small gardens." Among other fruits of this class, he reckons the *Imperial Ottoman Plum*, fig. 84, of which he gives the following description:

"This valuable fruit is comparatively little known. It is named, but not described in the Catalogue of the London Horticultural Society. We believe it was imported from Europe many years ago by the late proprietor of the Linnæan Garden at Flushing.

"The Imperial Ottoman has qualities which will soon make it a very popular plum. In the first place, it is among the *earliest* sorts, ripening only two or three days after the Morocco. Secondly, it is *remarkably juicy*, sweet and excellent; the flesh of very melting texture. Thirdly, it is a most abundant and very regular bearer; the fruit hanging in the richest clusters. And lastly, it is a very hardy tree—suiting itself to almost any climate, where the plum will thrive.

"The Imperial Ottoman is a fruit of medium size, oval and regularly formed. The skin is of a pale, semi-pellucid greenish yellow, a good deal marbled. In general appearance, the fruit approaches, somewhat, the Imperial Gage, but the skin is thinner and more transparent. It hangs for some time upon the tree, and though borne in thick clusters, does not incline to rot like some of the finer plums. The stalk and leaves are rather downy, and the former is slightly inserted. The skin is covered with a delicate whitish bloom; and the flesh, when fully ripe, scarcely adheres to the stone."

Another fine plum mentioned in this article is the *Jefferson*, a variety produced and named by the late Judge Buel. The original tree which stood near his residence, we believe died during the last winter. We extract from Mr. Downing's "Fruit and Fruit Trees of America," the following description of this plum: "Branches slightly downy, leaves oval, flat. Fruit large, oval, slightly narrowed on one side towards the stalk. Skin golden yellow, with a beautiful purplish-red cheek, and covered with a thin white bloom. Stalk an inch long, pretty stout, very slightly inserted, suture indistinct. Flesh deep orange, (like that of an apricot,) parts freely and almost entirely from the stone, which is long and pointed; very rich, juicy, luscious, and high flavored. Ripens the last of August, and hangs a fortnight on the tree."

There is no doubt that this is one of the finest plums known. Mr. Downing observes, in the article in the Horticulturist to which we have referred, that "every year's trial confirms our high estimation of its merits. We perceive," he continues, "that it is now well tested in England, and equally admired there."

Another article in the first number which is particularly worthy of notice, is one on "The best five Winter Pears, by M. P. Wilder," Esq., President of the Massachusetts Horticultural Society. Perhaps no branch of horticulture has for several years yielded a better return in the shape of profits, than the production of winter pears in situations convenient to large markets. The production of this description of fruit might doubtless be increased to great advantage. We are acquainted with cultivators in Massachusetts who meet with a ready sale for considerable quantities of winter pears at five dollars, and in some instances as high as twelve dollar per barrel.

Mr. Wilder is an eminent and successful cultivator of pears, and in offering a list of those kinds to which he gives the preference, he has been guided by several years' experience. The first he mentions is the

1. *Beurre d'Aremburg*, a variety which for ten years, he says, has never failed to yield him an abundant crop. It keeps, he says, "as well as a Russet apple." He states that "it is easily excited to maturity, and may be brought into eating in November or retarded till March."

2. The second kind mentioned is the *Winter Nelis*, which is held in much esteem. Ripens from November to January.

3. *Columbia*—This is an American variety which originated in Westchester county, in this state. Mr. Wilder states that having heard of this pear, he some

years ago dispatched a special messenger to the owner of the tree, and obtained half a bushel of the fruit, with which he was so much pleased that he did not regret the expense of twelve and a half dollars incurred in procuring it. Ripeens about the first of January.

4. *Glout Morceau.*—This has been confounded, as Mr. W. states, with the Beurre d'Aremburg. It is said to be a rich sugary pear, in season December and January.

5. *Passe Colmar.*—A hardy and vigorous pear, "Prolific to a fault," so that to obtain fruit of the best size and quality, Mr. W. states that it is necessary to trim out half the fruit-bearing spurs, which should be done in the month of March. Ripens from November to February, but may be kept till March.

Fig. 86.—*Design for a Rustic Gate.*

An article recommending the "AMERICAN ARBOR VITÆ FOR SCREENS AND HEDGES," by A. SAUL, is worthy of notice. The first example of the use of the Arbor-Vitæ for the purpose here mentioned, ever seen by the writer, was on the grounds of the Messrs. DOWNING. The beauty and perfection of some screens in the gardens of those gentlemen, exceed anything of the kind we have ever seen. They are from sixteen to eighteen feet in height, the sides as true as the walls of a building, (though never trimmed) and impenetrable to sight. MR. SAUL states that the arbor-vitæ is entirely free from disease or tendency to decay; it preserves its freshness of green through the summer, and does not suffer from the effects of winter.

The article "ON THE CULTURE OF PEACH ORCHARDS," by J. W. THOMPSON, of Wilmington, Delaware, contains much that is interesting and useful. Mr. THOMPSON states that the credit of introducing, on a large scale, the culture of the peach in Delaware, is due to Mr. ISAAC REEVES, a native of New Jersey. This gentleman and Mr. PHILIP REYBOLD, Jr., are said to be the two largest and most successful cultivators of this fruit in Delaware. Mr. REEVES formed a partnership some years since, with JACOB RIDGEWAY, of Philadelphia, and in the spring of 1832 they set out the first twenty acres of innoculated peach trees ever planted in the state, and their plantation was soon extended to 120 acres, the sales from which in one season reached sixteen thousand dollars. But it is added that peaches then commanded from $1¼ to $3 per basket containing 3 pecks. At this time, the extent of land set to peach trees in New-Castle Co., Del., is stated to be from 2,500 to 3000 acres. The price, of course, has diminished with the increase of production, the present average, take one year with another, being from 30 to 60 cents per basket.

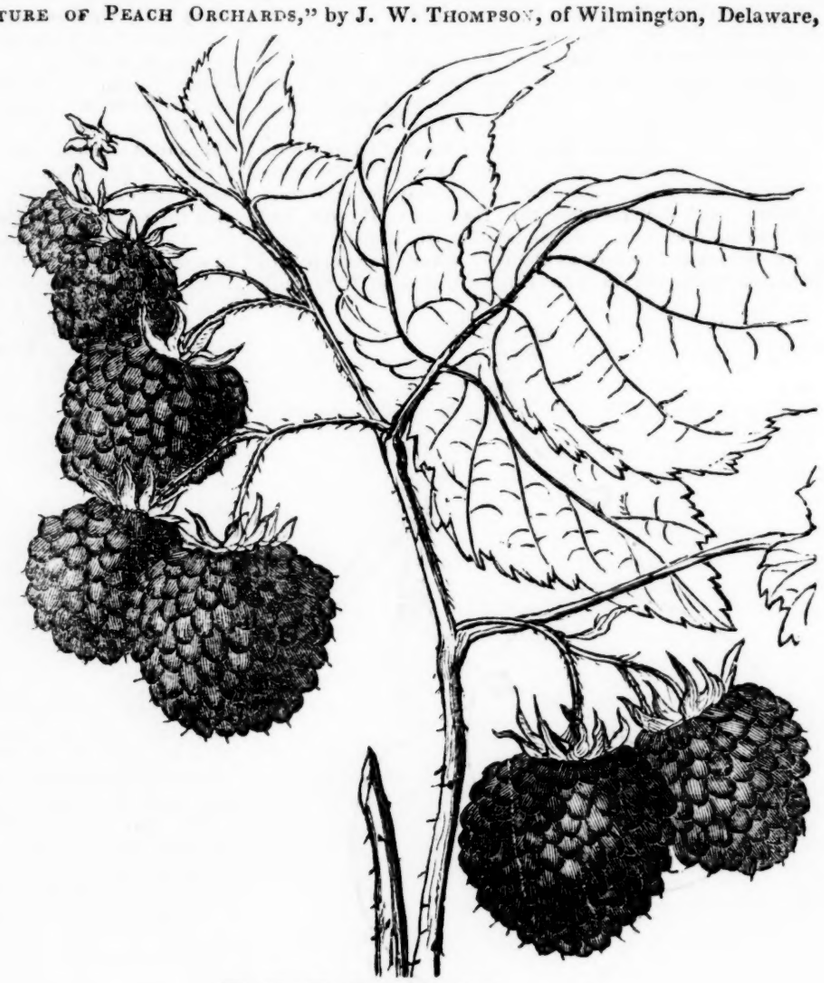


Fig. 87.—*The Fastolff Raspberry.*

None but the best kinds are now cultivated; the object being to have them as early and as late as possible. All the trees are budded. The earliest, which begin to ripen the first week in August, are Troth's Early, Early York, Early Ann; and the later, which continue till the last of October, are Ward's Late Free, Heath, Algiers' Winter. The mode of preparing the ground for peach orchards is said to be precisely the same as for Indian corn. The trees are set in rows from 20 to 30 feet apart. The ground is cultivated in corn or some hoed crop for three years, when the trees begin to bear, after which no crop is grown, but the ground should be plowed three or four times in a season. The average life of the trees is from nine to twelve years; and their greatest

enemies are the "peach-worm" and the "yellows." "The first," it is said "readily yields to the knife and the treatment of semi-annual examinations; the latter being a *constitutional, consumptive,* or *marasmatic disease*, for which no other remedy is as yet known or to be practiced, but *extirpation* and *destruction*."

The first article in the second number of the Horticulturist of which we would now offer any notice, is one on "THE BLIGHT IN THE PEAR TREE," by the editor. Mr. DOWNING believes that there are "two distinct maladies" known by the name of *blight*. One, he thinks, is caused by insects, and the other by the freezing of the sap. He remarks—"The *insect blight* we do not consider a malady of a very serious nature. As it begins at the extremity of the tree, at or near the ends of the branches, and as its spreading depends entirely upon the care or carelessness of the cultivator, it is his own fault if it ever destroys *many* trees. Experience and observation have convinced us that the pruning knife, vigorously applied the moment the insect first commences his attack in June, and faithfully persisted in, will soon rid one's garden or orchard of this minute but most poisonous *Scolytus*." As soon as a branch turns black, it should be cut off a foot below where it is affected or discolored.

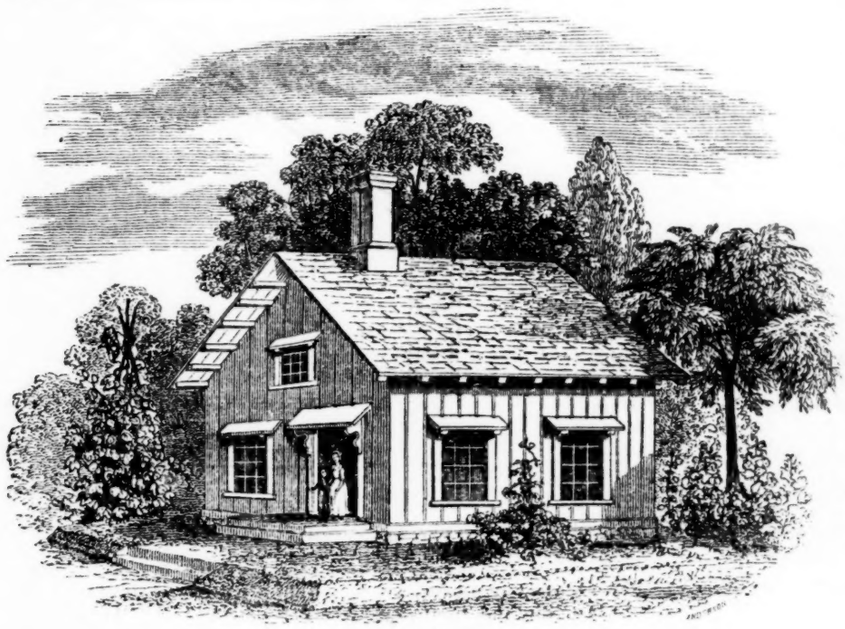


Fig. 88.

The "frozen sap blight," Mr. D. thinks "another and much more alarming disease,—that it doubtless arises from the sudden freezing and thawing of the sap vessels in winter." Of this disease he speaks as follows;

"If any one will carefully examine a tree affected by the frozen sap blight, he will notice *spots* on the bark of the trunk or principal branches, which have a dead or withered appearance. The bark there is contracted, blackish, and is shrunk below the level of the surrounding healthy portions. This is often observable very early in the spring. As the season opens, the tree starts into leaf, and grows luxuriantly: suddenly, about the middle of June, sometimes a little earlier or later, a terminal shoot, a branch, or the whole tree, droops and dies.

"If we pursue the examination a little further with the knife, we shall find the inner portion of the bark next the wood—in short, that part where the downward current of sap takes its course—has assumed a blackish hue. This taint is not confined to that part of the tree, viz., the limb or branch where the *external* symptoms of the blight are shown, but extends, more or less rapidly, from that point through the whole of the rest of the tree, unless it is arrested by amputation in a very early stage."

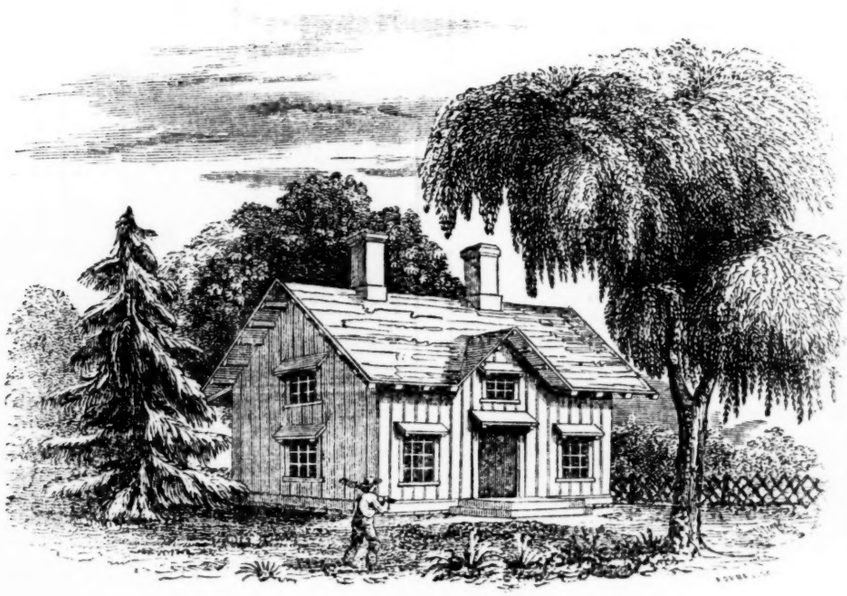


Fig. 89.

Mr. DOWNING observes that—"the frozen-sap blight is not confined to the pear tree alone. We have seen it in several other trees not entirely hardy in this latitude, or which suffer from winters of unusual severity. Such are the Ailanthus, the Catalpa, and the Spanish Chestnut."

From the fact that these diseased spots almost invariably appear on the southern side of the trees, Mr. D. thinks that the injury is occasioned "by the too rapid *thawing* caused by the sun's rays which bursts the sap vessels, and is the immediate cause of the matter deposited on them. Were it the effect of frost simply, the evidences would appear equally on all sides of the trunk."

In answer to the question "What is the remedy for the frozen-sap blight?" it is observed—"For the blight in its milder forms, as we have already said, vigorous pruning is often sufficient to arrest its further progress. When it nas thoroughly passed into the system of the tree, there is no known remedy. But perhaps a still more important question to the orchard grower of pears is this: Is there no certain preventive

to this most destructive form of blight, for those soils and situations most exposed to it?

"It is with a view of suggesting such a remedy, that we have called attention to the subject at the present time. We propose to prevent the frozen-sap blight entirely, *by whitewashing the stems and principal branches of all valuable pear trees every autumn, after the leaves have fallen.* By this simple operation, we think the injurious action of the sun will be entirely prevented; its rays will be, for the most part, reflected, and the rapid thawing of any large part of the bark rendered entirely impossible."

Next we have an article, with an engraving, of the noted Fastolff Raspberry. This fruit was first brought into notice in England, in 1842, and has been the prize variety at the leading horticultural shows there ever since. Mr. Downing thinks it will be as highly esteemed here as it is there.

An article "On the Cultivation of the Lily Tribe," by that judicious cultivator, Joseph Breck, of Boston, cannot but be valuable to those engaged in that branch of floriculture.

"A new mode of growing Sea Kale and Rhubarb," appears to consist in covering the plants, in the month of November, to the depth of fourteen inches with peat earth. The dark color of the peat is supposed to draw the heat of the sun, keeps the frost from the roots, so that they are "in a fit state to be excited into growth by the first bright weather in March."

The "Design for a Rustic Gate," of which the above cut fig. 86, is an illustration, is pretty and tasteful. In reference to this kind of structure it is observed:—

"Rustic work is very perishable, if it is made of little bits of rough branches of any kind that are picked up in the forest after the wood-chopper. On the other hand, if it is always made of the branches of the common Red Cedar, so abundant in most parts of the country, it will last a long while, and prove both strong and serviceable."

The article on the "Carnation, its History and Culture," is a capital treatise on the culture and management of that fine flower.

The third number opens with a description, with neat cuts, (figs. 88 and 89.) of "The Simple Rural Cottage, or the Working Man's Cottage." This article is also by the editor, who introduces some excellent remarks in regard to the various styles of architecture, and their adaptation to different edifices. In regard to the class of buildings under consideration, the writer remarks—"we wish to see the working man's cottage made tasteful in a simple and fit manner." In the two views here given, the object is to call attention to the exterior of the dwellings, leaving the internal arrangements to the taste or circumstances of the builder. The following remarks in reference to these plans will afford the necessary explanations.

"Whatever may be thought of the effect of these designs, (and we assure our readers that they appear much better when built than upon paper,) we think it will not be denied, that they have not the defects to which we have just alluded. The style is as economical as the cheapest mode of building; it is expressive of the simple wants of its occupant; and it is, we conceive, not without some tasteful character.

"Last, though not least, this mode of building cottages is well adapted to our country. The material—wood—is one which must, yet for some years, be the only one used for small cottages. The projecting eaves partially shelter the building from our hot sun and violent storms; and the few simple details which may be said to confer something of an ornamental character, as the rafter brackets and window dressings, are such as obviously grow out of the primary conveniences of the house—the necessity of a roof for shelter, and the necessity of windows for light.

"Common narrow *siding*, (*i. e.*, the thin *clap-boarding* in general use,) we would not employ for the exterior of this class of cottages—nor, indeed, for any simple rural building. What we greatly prefer, are good strong and sound boards, from ten to fourteen inches wide, and one to one and a fourth inches thick. These should be tongued and grooved so as to make a close joint, and nailed to the frame of the house in a *vertical* manner. The joint should be covered on the outside with a narrow strip of inch board, from two to three inches wide. The accompanying cut, fig. 90, *a*, showing a section of this mode of weather boarding will best explain it to the reader.

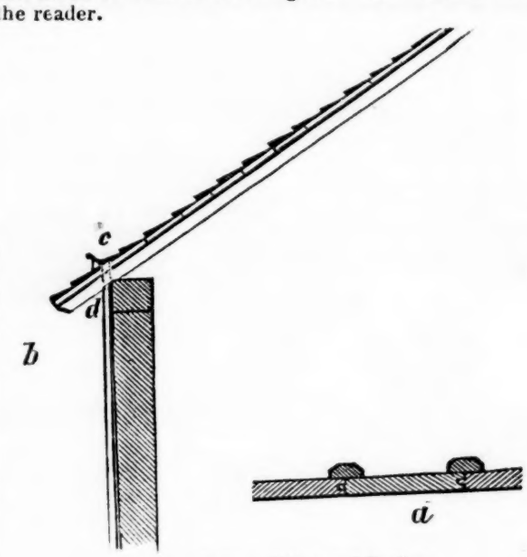


Fig. 90.—*Cottage Siding and Roofing.*

"The rafters of these two cottages are stout joists, placed two feet apart, which are allowed to extend beyond the house two feet, to answer the purpose of *brackets* for the projecting eaves. Fig. 90, *b*, will show at a glance, the mode of rafter boarding and shingling over these rafters, so as to form the simplest and best kind of roof.*

"The window dressings, which should have a bold

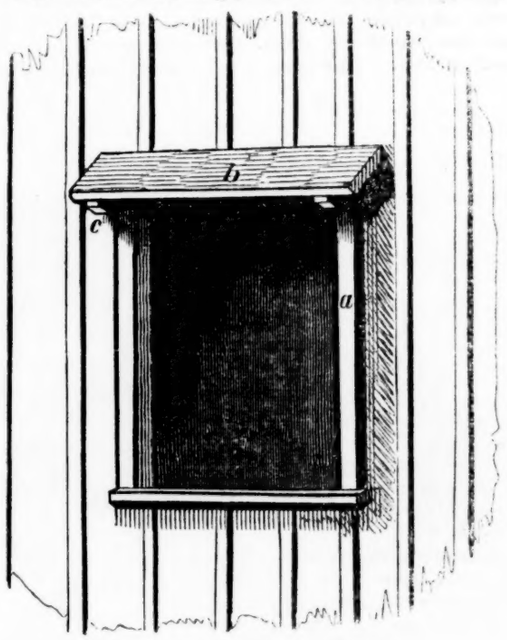


Fig. 91.—*Cottage Window Dressing.*

and simple character, are made by nailing on the weather boarding stout strips, four inches wide, fig. 91,

* The simplest mode of forming an eave gutter on a projecting roof like this, is shown in the cut, fig. 90, at *c*. It consists merely of a tin trough, fastened to the roof by its longer portion, which extends up under one layer of shingles. This lies close upon the roof. The trough being directly over the line of the outer face of the house, the leader *d*, which conveys away the water, passes down in a straight line, avoiding the angles necessary in the common mode.

a, of plank, one inch and a half in thickness. The coping piece, *b*, is of the same thickness, and six to eight inches wide, supported by a couple of pieces of joists, *c*, nailed under it for brackets.

"We have tried the effect of this kind of exterior, using *unplaned* boards, to which we have given two good coats of paint, *sanding* the second coat. The effect we think much more agreeable—because it is in better keeping with a rustic cottage, than when the more expensive mode of using planed boards is resorted to.

"Cottages of this class, we would always paint some soft and pleasing shade of drab or fawn color. These are tints which, on the whole, harmonize best with the surrounding hues of the country itself.

"These two little designs are intended for the simplest cottages, to cost from two to five hundred dollars. Our readers will not understand us as offering them as complete models of a workingman's cottage."

We have given the above notices of the contents of "THE HORTICULTURIST," to furnish our readers with a general view of the work, which is entirely separate and distinct from "THE CULTIVATOR." Very rarely, if ever, will the same articles appear in both publications. Besides the more elaborate articles, to some of which we have alluded, a portion of each number of "THE HORTICULTURIST" is devoted to reviews of publications on such topics as come within its scope, and to Foreign and Domestic Notices, embracing translations from the French and German periodicals, and extracts from those of England, on rural subjects, together with everything transpiring in our country of particular interest to the horticulturist.

The Horticulturist is published on the first of each month, each number containing 48 pages octavo, printed in the best manner on paper of the finest quality, and illustrated in the same beautiful style as Mr. DOWNING'S previous works on Landscape Gardening and Rural Architecture. The engravings in the first number, consist of views of two country houses, six Plums and Pears, two Ornamental Trees, training Figs, and Swainstone's Strawberry. The frontispiece of the second number is a view of Mr. DONALDSON'S Vinery at Blithwood. The same number has eleven other engravings, including the Fastolff Raspberry. The third number has for a frontispiece, the two beautiful rural cottages, which we have transferred to this paper, and ten other cuts, embracing Fruits, Plants, &c. Terms, $3.00 per year—20 per cent. discount to Agents. The Agents for "The Cultivator," throughout the country, are respectfully invited to act as Agents for "The Horticulturist."

CURE FOR RING-BONE.

A. D. GAGE, of Macedon, N. Y., an intelligent and successful farmer, gives the following remedy for the cure of Ring-Bone, which he has known to be tried in numerous instances, without failure, when applied in an early stage of the disease. Where it has not been more than one or two years standing, from the appearance of the first symptoms, a cure is almost certain. Cases of longer standing are usually much benefitted, the growth of the ring-bone being arrested, when the disease is not cured.

The remedy consists in the application of a mixture of spirits of turpentine, oil of spike, and oil of vitriol, one ounce of each being a convenient quantity. The ounce of turpentine is first put in a strong bottle, the oil of spike added and well mixed, and then the oil of vitriol is introduced; the bottle is then firmly corked, and well shaken before used. Especial care must be taken that the turpentine and oil of spike are well mixed first, as the application of the oil of vitriol to pure turpentine, produces instant combustion. Considerable heat will be produced by the process already described. A common black bottle will do very well.

Then bathe the diseased part thoroughly, once a day for three days; drive the mixture in by the application of a hot iron. Then to prevent the part becoming too sore, suspend the bathing for three days, when it is to be again resumed. Some horses' feet are more quickly made sore than others; discretion must be used to prevent too great soreness. After three turns of applying the remedy, it may be discontinued; and the sore, thus produced, treated with lard, or other application, as in case of any other sore.

The remedy is supposed to owe its efficacy to the operation of the mixture as a *caustic*—acting upon and destroying the vessels which gradually secrete the ring-bone;—so that it may be strictly regarded as a *preventive*, proving effectual in cases of short-standing, and preventing the increase of those of longer continuance.

ROAD MAKING.

THERE is scarcely anything, next to the direct improvement of the farm, that is of more importance to the farmer, than good roads. He must necessarily spend a considerable portion of his time in travelling either long or short distances. The conveyance of produce to market, is alone a very considerable item of cost and labor. Many farmers are compelled to spend at least one day in seven, on an average, in driving on the road. It therefore becomes a matter of really serious importance, whether his horses accomplish this work with difficulty or with ease.

There are two or three points, which if sufficiently attended to by all road makers, would, *with no additional cost*, work a revolution in our roads—nay, more, would actually advance the price of land, in many well settled districts, to an aggregate amount of hundreds of thousands of dollars. The Erie canal added to the wealth of the country hundreds of millions; fine and easy roads, by virtually diminishing distances all through the country, would be of the highest benefit.

1. One of the most important points, is to preserve a *level*, as nearly as possible. This importance is strikingly exhibited by the computations and experiments for engines on railroads, the same principles applying in less degree, to common roads. It was found that an 18 ton engine,

On a level, would draw,	.....	700 tons.
" grade 10 ft. per mile,	.....	452 "
" " 20 " "	.....	332 "
" " 30 " "	.....	263 "
" " 50 " "	.....	185 "

That is, if a horse could draw seven tons on a railroad, on a level, he could not draw two tons up a slope of only one foot in a hundred. But a slope of only one foot in a hundred on a common road would be regarded by every one as about the same as a dead level;—what then must be thought of such ascents as are continually occurring, of one foot in three or four! The loss of power here must be enormous. But enormous as it is, and straining to a horse's every muscle and joint, it is in most cases entirely unnecessary. Many parts of the country are more or less broken up into irregular hills. But with most singular stupidity, the roads instead of being led judiciously *round* them, by slight curves, pass directly *over* them. Sir Joshua Reynolds said that if he were to paint Folly, he would represent a boy climbing over a high and difficult fence, with an open gate close beside him. He could have done it much better by exhibiting a road, for the accommodation of, say fifty teams a day, year in and year out, ascending a sharp hill and then down again, with a fine natural valley or level for the road twenty-five rods distant.*

Every common road to be perfect, should be laid out with some kind of levelling instrument, and where ascents must be made, proper curves should make them as easy as possible. Narrow and small gorges should be crossed by bridges or embankments. Let not the narrow policy that this or that man's fields are cut into an inconvenient shape, ever prevail. It is better for every farmer to have a three-cornered field, if he can only

* Within a circuit of ten miles from the residence of the writer, there are not less than twenty cases where roads ascend and pass down sharp hills, at least fifty feet perpendicular height, while a very slight curve would place the road on nearly a perfect level, without adding five rods to its length.

have level roads, on which his horses may draw double loads with ease.

2. The *material* for the construction of roads is very essential, and often entirely neglected. The surface of the earth is in many cases rich black mould or muck, very fine for the growth of potatoes and corn, but making horrible wagon tracks. It is however usually scraped into the highway for the very simple and cogent reason that it is scraped easily, being so much softer than the hardpan below, which though hard to work, would nevertheless be equally hard to get muddy. Sometimes, like the politician, who "steered between right and wrong," a midway course is taken, or rather both plans are adopted; that is, the muck is first scraped up into a high turnpike, and then a coat of hardpan covers the top—which does well for light wagons, but heavy ones cut through the crust into the manure below. One of the hardest and smoothest roads we ever saw, was the wide shallow *ditch* made by scraping the muck out, to form the turnpike, and thus leaving the clean hard-pan surface. What fine hard roads might be made in many places, by merely removing the black upper soil to enrich the adjacent fields.

3. A third important item, is the removal of loose stones. The law of the state of New-York requires that all road-overseers should cause these to be thrown from the road once a month, but it is rarely observed. It is believed that if this were strictly attended to, and our roads kept smooth, wagons and carriages would last double the time they now do, to say nothing of the discomfort of being thoroughly jarred a thousand times a day, and the rack to horses, harness, and merchandise. A single stone, against which every passing vehicle thumps like a sledge, may alone cost a hundred dollars a year by broken or shattered wagons.

The property invested in wagons in the state of New-York alone, is probably not less than ten million dollars. If by keeping the roads smooth, by the removal of stones, this enormous sum would need renewing only once in twenty-five years, instead of once in twelve years as now, would it not be an economical operation?

If a hundred thousand farmers in the state, do fifty dollars worth of teaming on the road, each, per annum, the yearly aggregate would be five millions. If their loads could be doubled, by making all the roads nearly level, would not the clipping off of a few farmers' fields for the passage of the road, be a matter of strict economy to individuals, as well as a great public benefit?

If besides, by all these improvements, bringing farms virtually nearer market and all other places of business, the price of land should rise, as it certainly would, at least to some extent, who would be the loosers?

PRESERVATION OF APPLES.

.....

We think the following extract from Downing's "Fruits and Fruit Trees of America," furnishes the best answer that can be given to the various inquiries we have received in relation to preserving apples.

In order to secure soundness and preservation, it is indispensably necessary that the fruit should be gathered by hand. For winter fruit the gathering is delayed as long as possible, avoiding severe frosts, and the most successful practice with our extensive orchardists is to place the good fruit directly, in a careful manner, in new, tight flour barrels, as soon as gathered from the tree. These barrels should be gently shaken while filling, and the head closely pressed in; they are then placed in a cool shady exposure under a shed open to the air, or on the north side of a building, protected by a covering of boards over the top, where they remain for a fortnight, or until the cold becomes too severe, when they are transferred to a cool, dry cellar, in which air can be admitted occasionally in brisk weather. A cellar for this purpose, should be dug in dry, gravelly, or sandy soil, with, if possible, a slope to the north; or at any rate with openings on the north side for the admission of air, in weather not excessively cold. Here the barrels should be placed on tiers *on their sides*, and the cellar should be kept as dark as possible.

When apples are exported, each fruit in the barrel should be wrapped in clean coarse paper, and the barrels should be placed in a dry, airy place, between decks.

BLIGHT SUPPOSED TO BE CAUSED BY THE BARBERRY.

.....

Mr. Editor—Will a barberry-bush growing in a man's garden on one side of the highway, blast wheat on the other side, or is it possible it will blast it at all?

Eleven or twelve years ago, I brought, for the distance of 30 miles, a root of the barberry, which I planted in my garden. Having heard that it was a saying among the New-Englanders that it would blast wheat, I asked the person from whom I got it, whether he knew anything relative to the subject. He replied that he believed the idea erroneous, adding that he had raised wheat successfully on his farm for 20 years, and he believed that his barberries, (for he had three large bushes,) had no influence whatever on his wheat.

My neighbor, on the other side of the road, sowed opposite to my garden, some four or five acres of wheat. The lot contained two kinds of seed. The kind sown nearest the road, and cornering towards my garden, was principally blasted, while the other kind was bright and a good yield. Hence, the conclusion is, that my barberry bush blasted the wheat, and that I ought to cut it down. I am informed that there were a few years since, two large bushes in town, cut down under the same pretence.

Now I would not take $5 for my barberry bush, as it is an excellent medicine, a fine ornament, and the fruit makes excellent preserves,—yet as no man has a right to injure another, my bush shall be cut down, provided I can be convinced it is an offender.

Zetto Barnes

Fabius, Onondaga Co., N. Y., Sept. 1, 1846.

.....

Remarks.—The idea formerly prevailed pretty extensively in some parts of New-England, that the barberry tended to blast grain, especially wheat and rye. In some districts where wheat was seldom grown, the belief that the shrub would blast rye, was quite common. We recollect seeing the matter put to something of a test. Some bushes came up in a field near a wall which formed a fence between the field and the highway. It was suggested to the owner of the lot that he had better dig up the bushes, as they would blast his grain. He, however, let them remain till they had for several years borne fruit. During this time the field was occasionally sown to rye, and the crop was strictly noticed to ascertain whether the bushes produced any effect, but none could be discovered—the grain being in all respects as perfect as had usually been produced on the farm, or on the same field before the bushes came up. We believe the notion of the deleterious effects of this shrub is now pretty generally exploded in the neighborhood to which we have referred.

In the Genesee Farmer, vol. iv., p. 158, David Thomas states that Humphrey Howland, of Greatfield, Cayuga Co., had raised excellent wheat, though "a very large barberry bush grew within three rods of the edge of the lot." Mr. Thomas also furnishes an extract from a letter of a correspondent of his, near Philadelphia, in which it is stated that "Seneca Lukens had a fine barberry bush which grew *at the side* of his wheat field without any perceptible injury to his crops." Mr. T. also quotes from a writer in the New-York Farmer, H. C., [Henry Colman?] who says, "for the two last years I have raised spring wheat *in the very near vicinity* of barberry bushes *without any perceptible injury*." No appearance of blast was discoverable.

We think our correspondent is very fair in offering to cut down his barberry bush if it can be *proved* to be

an "offender." But we hope his neighbors will be considerate enough to wait till the truth of their charges is clearly made out.

FEEDING WORK HORSES.

We have long been convinced that the best mode of feeding horses that are kept in the stable, is to mix the grain in a ground state, with the hay or straw, after the latter has been cut with a machine. Experiments have demonstrated that a considerable saving both of hay and grain may, in this way, be made. We have lately met with an account of a method of feeding said to be practised by Dr. Sully, of Somerset, Eng., which, it appears to us, may be worthy of adoption, to some extent. He has no racks for hay, as he deems it wasteful to feed uncut fodder. The horses are fed in mangers, over the top of which, to prevent the horses from tossing out food, cross-bars are nailed at about a foot apart. The cut hay and straw, and grain are regularly weighed out. The food is sometimes varied; but thirty pounds of food is given to each horse every twenty-four hours. The following shows the articles of food given, and the different modes of preparing it, as well as the quantity which each horse daily receives:

No.	1st.	2d.	3d.	4th.
1. Farinaceous substances, consisting of bruised or ground beans, peas, wheat, barley, or oats, ...	lbs. 5	lbs. 5	lbs. 10	lbs. 5
2. Bran, fine or coarse, ...	0	0	0	7
3. Potatoes, boiled or steamed, mashed in a tub with a beater, ...	5	5	0	0
4. Fresh grains, (boiled barley,) ...	6	0	0	0
5. Hay, cut down into chaff, ...	7	8	10	8
6. Straw, ditto, ...	7	10	10	8
7. Malt-dust, or ground oil-cake, ...	0	2	0	2
With 2 oz. of salt in each class.	—	—	—	—
	30	30	30	30

Of the four classes into which the ingredients are divided, Dr. S. most recommends those two which contain the steamed potatoes.

RECENT AMERICAN PATENTS.

Reported for "The Cultivator," by Zenas C. Robbins, *Mechanical Engineer, and Attorney for procuring Patents, Washington, D. C.*

For an Improvement in Fanning Mills—Daniel Clow, Port Byron, Cayuga Co., New-York, July 16th, 1846.

The principal novelty in this invention consists in combining two cylindrical screens of different textures; the one placed within and concentric with the other, with the vibrating screens of a fanning mill; so arranged that the mill can be operated in the usual manner, with the vibrating screens alone, or in combination with the double cylindrical screens.

Mr. Clow exhibited one of his improved fanning mills at the late National Fair, in this city, and it gave universal satisfaction. To illustrate the excellence and superiority of his mill for cleaning grain, Mr. Clow brought on with him a bag containing a mixture of wheat and every impurity that is ever found intermixed with it, one-half its contents only being sound wheat. By passing this mixture once through the mill, the sound wheat was perfectly cleaned and separated from every impurity, and from the light and shrivelled wheat.

CLOVER HULLING MACHINE.

Mr. Tucker—In a a letter lately received from Mr. M. H. Mansfield, the inventor of the "Clover Seed Huller," reported in the Cultivator for August, he informs me that one of his improved hullers, with a cylinder twenty-two inches in length and fifteen inches in diameter, is capable of hulling forty bushels of clover seed per day.

Z. C. Robbins,
Attorney and Ag't for Patents, Washington, D. C.

IMPROVEMENT OF WORN OUT SOILS.

Mr. Tucker—As every one has his own peculiar notions, I have thought I would give you my experience on the improvement of poor land. About twelve months ago, I read a work on calcareous manures, by Mr. Ruffin, of Virginia. As well as I recollect, the author lays it down as a fundamental axiom, that poor land cannot be permanently improved by putrescent manures alone. While mounted on a favorite hobby, especially if he ambles pleasantly and willingly, we are too apt to spur and flog the beast to death. Such is the enthusiasm with which this very respectable author has got astride of his hobby of calcareous manures, that he is disposed to undervalue all others. It is an amiable error he has fallen into, and without at all underrating the true value of his favorite manure, I give you the result of my own experience.

About eight years ago, I began to practice the enclosing system on an old field containing some 50 acres of barren sand, nothing else appearing in the composition of the soil. I should say that five bushels of corn to the acre would be the maximum under the best cultivation. I ordered stock to be rigidly kept off. It clothed itself the first year in a few sickly weeds. I then cultivated it in corn, and after husking on the land, cut down the stalks and shucks and chopped them in three pieces, giving it twelve months rest; result, a manifest improvement in the growth of weeds. I again cultivated in corn—the crop much better, but still producing not more than seven or eight bushels per acre. I then followed the same plan of cutting down and resting. The growth of weeds increased very perceptibly; towards the last of winter I plowed in the weeds, and in the spring planted in corn, the crop yielding ten bushels per acre; again cut down the stalks, &c., which were succeeded by a dense growth of weeds; plowed them in as heretofore, and planted one half in Baden corn, the other half our common corn. Produce, Baden corn, 24 bushels per acre; common do., 12 bushels per acre. Again cut down the stalks, which afforded an unusual parcel of litter to spread over the land; and while I am now writing, I never saw a more luxuriant growth of rich weeds. I intend planting again in corn the ensuing spring, and may reasonably calculate on an increase of one-fourth of the crop. And here you will pardon me for a little moralizing, which I deem, while on a subject of this kind, not at all out of place.

Here you see is land reclaimed from utter sterility and made productive, and this too by no extraordinary exercise of skill or industry, for I know that I am yet in my horn-book in the science of agriculture, which is as much a science as any of the learned professions; but while I survey even my unskilfully cultivated fields, and enjoy the happy feelings which it inspires, I am overwhelmed with gratitude to my Maker who has so clearly indicated that true felicity consists in obedience to his will, in acts of benevolence, in subduing and cultivating the soil, and in such avocations as are calculated to make us wiser and better men; pointing to the gardens of Epicurus and of Shenstone, rather than the bloody fields of Arbela and of Austerlitz.

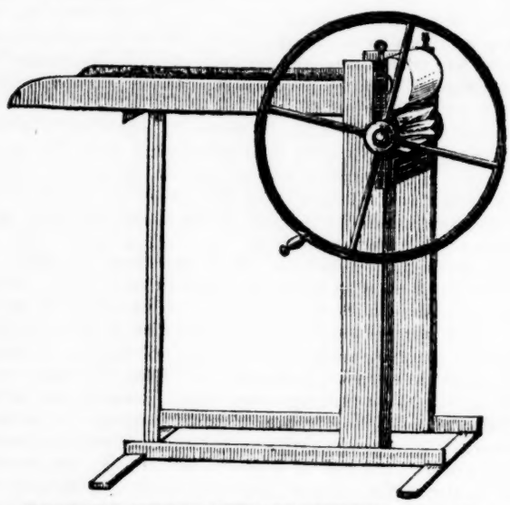
John D. Jones.
Topsail, New-Hanover Co. N. C.

POTATO ROT.

Mr. Tucker—As every thing in relation to this vegetable must be of interest to your readers, I communicate the following as the result of my observations. August 1st, examined my potatoes, Hill's Early and Chenangoes; they appeared all right. Within a week afterwards I found they were diseased very much. I dug them out and put them back in the drills, when the disease stopped. My late potatoes I found sound, and they have remained so. Last year my early ones were sound, and my late potatoes only were diseased. I witnessed, in a tour through a part of Maine, to the White Hills, and back to Massachusetts, what I took to be a general disease; but I have learned that in New-Hamp-

shire, and round Boston, the disease was sudden and alarming, but from some cause, or want of cause, at once the disease was stayed, and the potato crop is likely to be a good one. This is doubly desirable, inasmuch as we learn by the steamer Brittania, that the rot is quite as alarming this, as it was last year. We hope they may be agreeably disappointed. The above is confirmed from a correspondent in Wilmington, Delaware, where the early potatoes only were slightly diseased; the late ones are found sound.

Norfolk Co., (Mass.)



HOVEY'S SPIRAL STRAW-CUTTER.—Fig. 92.

Of all the various machines which have been invented for cutting fodder for stock, none have been more highly approved, after thorough trial, than Hovey's, a representation of which is above given. It has been frequently exhibited at Agricultural shows, and has, of course, been brought into competition with other cutters of almost every kind; yet it has not failed to receive the highest prizes on all occasions. Among the Societies whose highest premiums for cutting-machines have been awarded to Mr. Hovey, may be named the New-York State Agricultural Society, the Massachusetts Mechanic's Association, Massachusetts Society for Promoting Agriculture, besides several county agricultural societies in Massachusetts and other states. For particulars in regard to this machine, see advertisement in this number.

The advantages of cutting fodder for stock are so obvious, and seem now to be so generally admitted, that little need be said on this point. In the first place, by cutting, there is little or no waste of food. Secondly, the food is presented to the stomach in a condition the most proper for the digestive organs. Thirdly, an animal consumes less time in filling its stomach with cut than with uncut food. This is a very important consideration for laboring animals, which require all the rest and sleep they can enjoy, during the time they are not at work.

MADDER.

Why is it that such a vast amount of money is annually paid by this to foreign countries for this article, when we have a soil and climate so admirably adapted for its production? There is no good reason why we should import madder, any more than that we should import wheat, pork, or cheese. It is one of the most sure and profitable crops to which the American farmer can turn his attention. It is not subject to be destroyed by frost, drouth, insects, or farm stock. The demand for it is increasing in the same ratio with our manufactures.

James Eaton, of Winfield, Herkimer county, has cultivated madder for 18 years. He has madder of three years' growth, planted at the rate of 1,500 hills to the acre, that will yield, if dug the present fall, over 3 lbs. to the hill; this he will not dig till a year from this fall, when it will yield 4 lbs. or over to the hill. He has other madder which at 4 years growth, will yield 64 cwt. to the acre, merchantable madder. It may be well to give notice to the readers of the Cultivator, that he will be able to meet orders for seed the present fall. It will be sold, boxed, and delivered at Utica, at $2.50 per bushel. It requires 6 bushels to plant an acre. Plant on rich, mellow, dry land. An acre of madder, properly cultivated, and of four years growth, at $16 per cwt.,—the price he has obtained for his—will amount to over $900. M.

[We wish Mr. Eaton would give us a communication describing the process of cultivating, and preparing madder for market.—Ed.]

IMPROVEMENT IN BUDDING.

Mr. Tucker—The writer of this article supposes that he can suggest two improvements on the common rules of budding young trees; one in regard to the *time* of doing it, and the other in regard to the *mode* of doing it.

As to the *time* of budding, we are of opinion that the business has been generally deferred too long. The experience of the writer proves that August is better than any part of September; and that July is still better than August. By beginning to bud in July we secure several advantages; first, we find that the bark will peel more freely while the tree is in its most rapid growth; and this is of importance in the experiment. Secondly, by beginning early, if a bud fail of taking, there will be ordinary time to repeat the experiment. But if the bud *take*, as we say, we may gain a considerable *growth* the present year, and thus gain time.

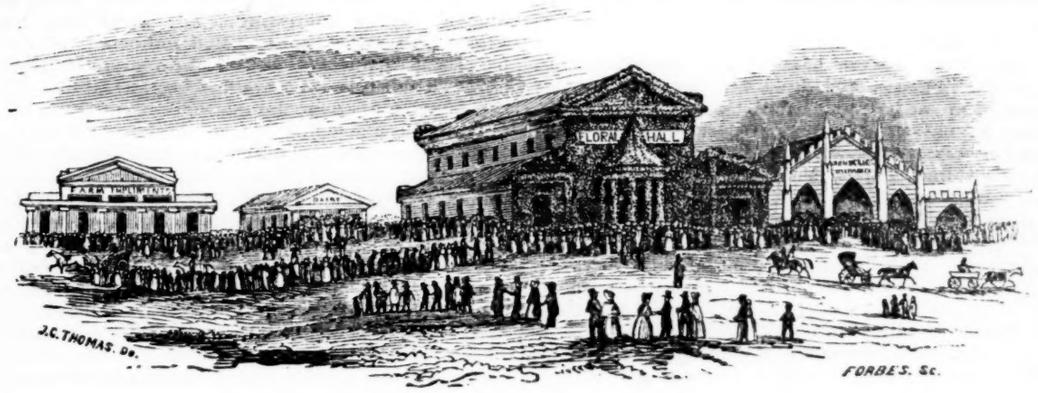
As to the mode of budding, it may be such as generally to have the buds grow the present year, if at all. Let them be inserted according to the usual mode, taking care when the bud is cut from the limb to *retain* the *sliver*, a woody substance which is cut off with the bud, as this will be more likely to preserve the eye uninjured. And now comes what we propose as the improvement, viz: clip off the end of every twig belonging to the limb in which the bud is inserted; and thus check the upward motion of the sap till the bud adheres or takes. Then, when you ascertain that a bud *has* adhered for growth, cut off the whole limb above the inserted bud as you have been, in the common mode, directed not to do until the next spring; and this will be followed by the starting and growth of the bud in a very few days.

This season I commenced budding in the latter part of July; and my success has been very satisfactory. Those inserted in the fore part of August, have done well, excepting those in plum trees, which have been a general failure. Peaches have succeeded the best, and pears next. I have several peaches which have begun their growth, (Sept. 3,) and one has grown several inches, and I think will grow a foot this fall. And they all appear to receive an impulse by this cutting off the limb above the inserted bud. I have also one pear which has begun to shoot forth, and others are promising to do it. As to peaches, I have no doubt that, were the limb above the inserted bud cut off at the time of insertion, it would favor the adhesion and growth of the bud, though I have waited till that took place. The latter mode, perhaps, needs an experiment.

As to the common mode of inserting the bud, and at the same time leaving the whole limb above to draw the sap, it is rather a wonder that the bud will take at all. It looks more rational that cutting it down partly or wholly, will leave more sap for the bud below, and this will favor its growth.

I found the requisite bud to be inserted, as perfectly formed in July as afterward. R. T.

Prospect, (Conn.,) Sept. 3, 1846.



THE STATE FAIR AT AUBURN.

View of the temporary buildings on the center of the Show-Grounds.

The Fair held on the 16th and 17th of the past month, was regarded as a whole, as about equal to that of last year; and the unabated interest of the people was evinced by the myriads which poured in upon the grounds from all parts of Central and Western New-York.

A piece of ground consisting of 12 acres on Capitol Hill, east of the village of Auburn, was chosen for the exhibition, which commanded a fine view of the surrounding country, extending forty miles west to the blue hills of Yates and Ontario counties. The general arrangement was nearly the same as that of last year, and the exterior aspect of the exhibition similar; but a most striking improvement was the architectural appearance given to all the buildings. Floral Hall was 150 feet long and 50 feet wide, with an irregular Grecian outline, the whole front with its fascades and portico, being densely clothed with evergreen. The light was admitted into the interior through a broad line of openings on each side above, softened by curtains of muslin, extending the entire length. This hall, in design, extent, arrangement, and finish, far exceeded any former one. A wide boarded platform or floor, 25 feet wide extended through the middle of the hall, on which were placed the terraced shelves for the exhibition of the flowers, vegetables, and fruits, and leaving a fine broad walk on either side. This line of shelves was interrupted at the centre of the building by a superb evergreen gothic temple 22 feet high, on a base of ten feet square, which added much to the imposing aspect of the interior, while the softened light from above on massive green columns and wreathes throughout the hall, gave the whole a truly magnificent appearance. This hall, and its decorations were designed by Dr. Alexander Thompson, of Aurora.

The three other halls, which were about 100 feet long and 30 wide, exhibited in their exterior design, a pure architectural taste. Two of them, one for the "DAIRY," and the other for the "FARM IMPLEMENTS," were in simple massive Grecian style, and the third, devoted to the exhibition of "DOMESTIC MANUFACTURES," was a beautiful building of the pointed Gothic form. These were all designed by George Casey of Auburn.

Great credit is due the enterprizing citizens of Auburn and its vicinity, for the unsparing liberality which they evinced in thus preparing for the exhibition. The untiring efforts of the ladies, who exerted themselves personally with the most praiseworthy zeal in these preparations, are also deserving of high commendation.

CATTLE.—The exhibition of Durhams was much more limited than on former occasions, though some very fine animals were on the grounds, from the yards of Messrs. Sherwood, of Auburn, Vail, of Troy, Allen, of Buffalo, Bacon, of Waterloo, Wakeman, of Herkimer, Parker, of Ballston, Button, of Newark, and Wells, of Johnstown, Hyatt, of Rochester, and some others. But few Herefords were exhibited; among them were 3 cows and a bull calf from Wm. H. Sotham, of Albany, and a very fine bull and cow from T. H. Hyatt, of Rochester. The display of Devons was excellent. Among the principal contributors were H. W. Washbon, of Otsego Co., S. M. Brown, of Onondaga, and L. F. Allen, of Buffalo. In the collection of H. N. Washbn, were a bull, two yoke of very fine steers, and other animals which the owner, with great public spirit had driven nearly one hundred miles to the fair, and which notwithstanding the fatigues of the journey, were unsurpassed on the ground. A pen of nine Devon calves, belonging to the same collection, excited very great interest, and indeed there was no part of the exhibition which was more interesting and beautiful. The native cattle and crosses were, with scarcely one or two exceptions, few and poor; and unless there is a reasonable prospect of an improvement, we think the suggestion of the chairman of the committee for their examination well worthy of attention,—that the amount of premiums on them be reduced, as some of these premiums are actually higher than the whole value of the animal itself. These remarks are of course not intended to apply to the superb display of working oxen, consisting of 16 yoke from Jas. S. Wadsworth, 10 yoke from J. M. Sherwood, and 11 yoke from several enterprising farmers of the town of Sennett. These attracted a great deal of attention from the congregated thousands on the ground, and as a whole were doubtless superior to those of any previous fair. But few fat cattle were exhibited; among them were two fine yoke from W. A. & J. Boies, of Homer, and two yoke from A. Pine, of Pittstown, and some cows from J. S. Wadsworth.

HORSES.—This part of the exhibition would compare very favorably with former years. There were a large number of stallions, and with very few exceptions, they were decidedly fine, some of them truly excellent. The Gifford Morgan Horse, 20 years old, possessing all the vigor and action of youth, from F. A. Wier, of Walpole, N. H., and his colt, 6 years old, from C. Blodget, Chelsea, Vt., excited universal admiration. A five year old stallion from C. Gaspar, Marcellus, Onondaga Co., was perhaps unexcelled for his beauty of outline, and approached as near the beau ideal of a handsome animal as anything we have seen. Several fine young horses of the Alfred stock, owned by Mr. Fordon, of Geneva, were much admired. Some of the matched horses were excellent. Mr. Fordon had also on the ground for exhibition, "Alfred," which took the first premium at the State Fair at Rochester, and the mare and colt to which was awarded the first premium at Utica. But in so fine and numerous a collection, it is impossible to point out within our brief limits, all thal are worthy of attention, and for further particulars, see the premium lists. We ought here to notice the excellent recommendations of A. Ferguson, chairman of the committee, on the great importance of the establishment of veterinary schools, that scientific and concentrated knowledge may be brought to bear on

the management and diseases of these invaluable animals.

Sheep.—Many fine specimens of Spanish Merino were exhibited. Several of these were from Vermont, from A. L. Bingham, and Rockwell and Sanford, of Addison Co., and from R. V. R. Horton, Hubbarton. From Connecticut were those of J. N. Blakeslee, and others. Among those from our own state, we noticed fine Merino sheep from James Randall, of Onondaga Co., and A. G. Percy, of Wayne Co., as worthy of commendation, and as also possessing the quality of not being overcharged with gum, which badly disfigured some otherwise excellent animals. Mr. Howard, of Owasco, Cayuga Co., exhibited fine specimens of what were called Paular Merinos. Good South Downs were shown by Z. B. Wakeman, of Herkimer, and J. M. Sherwood, of Cayuga Co. The number of long-wool sheep were few. Some, not sheared the present year, have wool 14 inches long.

The exhibition of Swine was rather meagre, nor did we notice any eminently worthy of attention, though a few fine animals were on the ground.

Implements.—Although the variety was hardly as great as on some former occasions, there were a number new and valuable, and the display was exceedingly interesting. The importance of this part of the exhibition, was shown by the hundreds of farmers who were constantly examining them, and thus at one view obtaining information of their construction and use, many of them, where admissible, being kept in constant operation.

Among those which we noticed, were the reaping machines of Hussey and McCormick, both of which excited great interest; Fitzgerald's portable burr-stone mill and horse-power, in operation on the ground, two horses grinding from three to four bushels per hour; several straw-cutters, among which were Webb's of Cayuga Co., Sanford's, from H. A. Chase, Rochester, and a large one for hand or horse power, recently constructed by George Catchpole, of Geneva, N. Y. A considerable number of horse-powers and of cultivators were also upon the ground. A newly invented sowing machine, by Jones & Smith, Fairfield, Ct., was shown, remarkable for its simplicity of construction, and for the effectual scattering of the seed, which was done by a rapidly revolving cylinder covered with projecting pegs, under the distributing box. A threshing machine and separator, of coarse wire seives; a clover mill, by Sharpe & Barrick, of Seneca Co.; a corn-planter, which furrows out, drops, covers, and rolls, at one operation, drawn by two horses, invented by John Long, of Livingston County; a sowing machine by P. Seymour, of E. Bloomfield, N. Y., for sowing broadcast, plaster, grass-seed, or grain, of any kind; a machine driven by horse-power, for cleaning buckwheat from grit, dried blossoms, and other impurities, and Hall's stump-machine, figured and described in a former volume of the Cultivator,—were all upon the ground. Among the horse-rakes, were L. M. Whitman's, Pike, Allegany Co., made with wire spring-teeth, revolving at the command of the rider, who holds a cord for the purpose; and one of simpler construction, also with spring teeth, from T. G. Yeomans, of Walworth, Wayne Co., possessing some decided advantages over former rakes. A flax-pulling machine, from H. Hill, Peruville, N. Y., excited much attention; flax is caught between a large rope with a rough surface, and a large horizontal revolving cylinder, on which the rope passes; the cylinder being slightly inclined. the rope rises as it passes round, and thus draws the flax from the ground, dropping it as it again leaves the cylinder, in a box on the opposite side.

The plows were excellent, but there were none new in construction and principle, and consequently an extended notice is not needed. Delano's Diamond Plow was generally regarded as fully equal, if not superior, though excellent ones were exhibited by J. B. Gaylord, D. Anthony, and others.

There was a fine collection of carriages and buggies, from several contributors.

The Contents of the four Halls, were in the highest degree interesting. The great rush was to Floral Hall, and its congregated collection of flowers, fruits, and vegetables, arranged in most brilliant display. The flowers were fine for the season. Among the contributors were James Wilson, of Albany, who presented a fine collection of Dahlias, Verbenas, and other plants; a fine collection from Prof. Jackson, of Schenectady; fine Dahlias, from Edward Thomas, of Geneva; very neat and tasteful bouquets from L. L. Menand, of Albany; and many fine flowers in splendid bouquets and masses, from various sources, among which we particularly noticed those from E. T. Throop Martin, of Willow Brook, Owasco Lake. Ellwanger & Barry, of Rochester, exhibited a very select collection of Dahlias, consisting of 25 varieties, and handsome masses of intermixed Verbenas, of 12 different species and varieties. A splendid floral ornament terminated one end of the hall, designed by ——— ——— of Buffalo, composed of lettering of flowers on a dark green moss ground. H. Morgan, of Aurora, N. Y., and Elihu Tyler, of Buffalo, also presented fine flowers.

Of Fruits, the number of varieties was large, though in *quantity* they were less than on former occasions, which led to the erroneous impressions that the exhibition was deficient. Some of the best collections in the state were, however, not represented. The increased number of contributors of extensive collections proved conclusively the advancement in the introduction of fine kinds. Among the principal contributors, were E. C. Frost, of Chemung County, who furnished 30 varieties of apples; J. F. Osborn, of Port Byron, a large collection of apples; Elwanger and Barry, of Rochester, about 10 sorts of peaches, 40 of apples, and 60 of pears, with some fine exotic grapes; Charles Powis, of Greece, Monroe Co., a large collection of apples; H. Wendell, of Albany, fine peaches and pears; a large collection from Bissel & Hooker of Rochester; extensive miscellaneous collections from A. Bryant and B. Hodge, of Buffalo; also miscellaneous collections from Wm. Webb, of ———, and from ——— Allen, of Oswego. H. H. Coit, of Northern Ohio, presented a very fine and select collection of fruit, containing several specimens of uncommon beauty and size. Excellent specimens of Isabella grapes were exhibited by A. V. Pulsifer, of Auburn, some of the bunches being eight inches long, and a single vine, twenty-one feet long, had growing upon it eighty-one pounds of grapes, his success being mainly dependant on his excellent and thorough pruning.

We ought here to notice a striking inconsistency, which has hitherto existed at our annual exhibitions, which only needs to be seen to be rectified. Much complaint has been made of the meagerness of our horticultural exhibitions, and of the comparative fewness of the articles. This we believe will continue to be the case so long as the premiums on this department are so few and small. The present year, over *six hundred dollars* cash were offered in premiums on cattle alone. At the same time, while the fruit trade is rapidly rising in importance, and while many farmers we could name derive more profits from their orchards, than from all other farm crops put together,—the whole amount of all the premiums in cash the present year on fruit, was only *seventeen dollars*. This glaring disproportion becomes still more striking when we observe the great expense which is every year bestowed in preparing a place for the reception of these articles. One thousand dollars, more or less, is expended in the erection and adornment of Floral Hall—and seventeen dollars in premiums on the articles to fill its principal department.

The exhibition of vegetables was not extensive, but contained many fine articles. There were among others, a miscellaneous collection from C. F. Crossman, of Rochester; sweet potatoes from H. G. Dickerson, Lyons, a peck from two hills, though but partly grown; enormous winter squashes twenty inches in diameter, from H. G. Dickinson; and six enormous squashes grown from one seed, all shown attached to the vine, the lar-

gest about two feet long, and the aggregate weight 573 lbs., from H. Hubbard, Canandaigua.

There was a fine display of many varieties of seed corn; and three specimens of wheat, the Soule's, Harmon's White Flint, and Kentucky White, were exhibited by Gen. Harmon, of Wheatland, and a very superior sample of White Flint from Martin Smith, Wheatland.

The MANUFACTURER'S HALL presented a very brilliant attraction by its numerous and splendid contents. Among these was a splendid display of carpets, of various degrees of excellence and finish; broadcloths of superb quality, and various other woolen articles; a very rich display of hearth rugs; bed quilts, a numerous collection, some of them truly splendid; specimens of fine cabinet ware from various sources; numerous specimens of ornamental needle work, skilfully wrought; rich specimens of raised worsted work, seat covers, and fancy chair work; stuffed quilts and worked quilts; bonnets and embroidered work. A large collection of domestic and household articles, made of silk, worsted, and other materials, was rendered very interesting by the fact that they were produced from the farm of Dr. S. Vorhees, of Amsterdam, and manufactured by his wife, the thread, floss, worsted, silk, &c., being all spun, wove, dyed, and manufactured by herself. There were also shell work of uncommon neatness, by L. C. Morris; very fine specimens of whips, by W. R. Strong, Rochester; a large collection of locks, from Price & Dana, Utica; cutlery from Ibbotson & Brother, and also by Holley & Merwin, of Salisbury, Conn., the latter of as fine a finish as the best imported articles; machine cards, manufactured by Hopkins, Sargent & Co., Auburn, N. Y.; stone ware, from N. Clark, Lyons, N. Y.; calculating machines, by A. Palmer, ; and portable shower baths, from —— Bates, of Rochester. A very simple and ingenious contrivance was Gifford's patent weather-strip, for completely excluding rain and snow from entering houses under weather doors, and which, projecting none, is scarcely visible when the door is open.

The hall appropriated to the productions of the DAIRY, contained but a small collection, and not at all comparing with the magnificent display at Utica, which is in the midst of a great dairy region. There were, however, some of excellent quality. That from E. R. Evans, of Oneida county, and from O. C. Crocker, of Broome, were in the opinion of the judges, fully equal to any made in the most famous butter districts in the country. Some excellent cheese was also presented for exhibition, by Robert Ells, of Westmoreland, Wm. Otley, of Phelps, and H. N. Washburn, of Butternutts, and others.

The hall for FARM IMPLEMENTS was variously occupied with stoves, fanning mills, straw-cutters, forks, hoes, grain cradles, bee-hives, &c. The stoves were of great numbers and variety, extending in two close rows nearly the whole length of the hall, and among them were cooking stoves for taverns and for farmers; air-tight-cooking; for the use of coal; elevated-oven stoves; double-oven stoves; parlor air-tight stoves, a large number of rich patterns; besides stove hollow-ware, steam boilers for washing, &c. There were also a planing machine, a boot crimping machine, a rock-drilling machine, a card printing press, &c., and a collection of highly finished steel farming tools, of various kinds, manufactured by F. Waters & Co., Westfield, Chatauque Co.

The plowing match took place on the morning of the 17th, ten competitors entering, and was said to be mostly well done.

On the afternoon of the last day of the Fair, many thousands assembled under the great tent prepared for the occasion, to hear the reports of the committees and the Annual Address from Samuel Stevens, Esq., of Albany. This address was extemporaneous, and was not intended by the speaker as a disquisition on the practical part of agriculture, but on its importance, and the means of adding to its dignity and pre-eminence. He stated that his pursuit in life, although not that of the farmer, had led him to reflect much on the salutary influence of agriculture on the welfare of the state and community—he urged the importance of more attention to the thorough education of our young men as farmers—the great truth that "knowledge is power," being pre-eminently applicable to this pursuit, and the consequent importance of directing its labors by MIND—and maintained that the common impression that it does not lead to wealth and power, is in consequence of less mind being brought to bear upon it than on the learned professions. He showed that agriculture holds essentially the highest rank in all the professions, being that which interests and confers happiness on the greatest number, and is hence at the foundation of the wealth of all nations, and their substantial prosperity, and contributing to the health and virtuous sentiments of the people more than any other pursuit;—that it furnishes the materials on which all the other arts depend—forms the distinction between savage and civilized life—that society began with agriculture, and civilization has kept pace with its advancement. He proceeded to show that as agriculture is the most ancient and universal pursuit, so it requires for its successful prosecution the application of more mind, more knowledge, more intellect than any other—hence the importance of the knowledge of chemistry, mineralogy, vegetable physiology, and of light, heat, and electricity, in understanding the influences on the growth of plants, and of animal physiology and entomology, for the management of stock, and thwarting destructive insects. He did not say that this knowledge was absolutely essential, but *more necessary* than for any other pursuit. He urged the importance of more general and thorough knowledge, to fit farmers to form a useful constituent part of the community—that seventy in every 100 in this country were engaged in agriculture, and hence the paramount interest of the farmers in government—the importance of a knowledge of political economy, as they may by their superior numbers entirely control the government, and its measures—the markets,—foreign,—domestic,—are variously influenced, and should all be understood, as the surplus products, on which alone the farmer depends for his wealth, would be of no value without market. The address concluded with an appeal for the dignity of agricultural labor, and also for the more thorough diffusion of knowledge among farmers, to fit them in common with all other citizens, for the important, noble, and exalted duties required as members of the social circle, as well as for holding the powers of government for the welfare of the millions under its influence.

After the conclusion of the address, the premiums awarded on the various articles exhibited, were declared from the stand, and this great exhibition closed.

As an *after-piecé* to the exhibition, there was a ball on Thursday evening, at Floral Hall, which is said to have been a brilliant affair. A cotemporary says—"*it was all that could have been wished.*"

The thanks of the many thousands who shared the private hospitalities of the citizens of Auburn, are eminently due for the kindness, liberality, and alacrity, which they evinced in so distinguished a manner on the occasion.

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LIST OF PREMIUMS,

Awarded at the N. Y. State Fair, Auburn, Sept., 1846.

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DURHAM CATTLE.

BULLS.—1st. J. M. Sherwood, Auburn, for Symmetry, $15; 2d. Wm. K. Grinnell, Ledyard, for Albion, $10; 3d. C. S. Button, Newark, for Osceola, Diploma.

Two-year-old bulls.—1st. H. N. Cary, Marcy, for Oregon, $10; 2d. J. B. Packer, Saratoga, for Tecumseh, Col. Tour.

Yearling bulls.—1st. Z. B. Wakeman, Herkimer, for Young Meteor, $10; 2d, A. G. Percy, Lyons, for May flower, Col. Tour; 3d. J. W. Bacon, Waterloo, for Waterloo, Dip.

Bull Calves.—1st. Geo. Vail, Troy, for Oscar, Col. Tour; 2d. J. W. Bacon, Waterloo, Diploma.

Cows.—1st. Geo. Vail, Troy, for Lady Barrington, $15; 2d. Edward Wells, Johnstown, for Venus, $10;

3d. J. W. Bacon, Waterloo, for Red Lilly, Diploma.

Two-year-old Heifers.—1st. H. N. Cary, Marcy, for Rose, $10; 2d. J. M. Sherwood, for Lalla Rookh, Col. Tour.

Yearling Heifers.—1st. Z. B. Wakeman, Herkimer, for Sylvia, $10; 2d. Edward Wells, Johnstown, for Cleopatra, Col. Tour.

Heifer Calves.—1st. Geo. Vail, Troy, for Willie 5th, Col. Tour; 2d. J. W. Bacon, Waterloo, for Lady Jane, Diploma.

HEREFORDS.

Bulls.—1st. T. H. Hyatt, Rochester, $15.

Young Bulls,—1st. and 2d. Corning and Sotham, Albany, $10 and Diploma.

Cows. 1st and 2d. Corning & Sotham, Albany, $15, and $10.

Heifers.—T. H. Hyatt, Rochester, $10; 2d. Edward Wells, Johnstown, Diploma.

DEVONS.

Bulls.—1st. L. F. Allen, Buffalo, $15; 2d. R. M. Remington, $10.

Young Bulls.—Geo. A. Mason, Jordan, $10; 2d. S. M. Brown, Elbridge, Diploma.

Cows.—1st and 2d. H. N. Washbon, Butternutts, $15 and $10.

Heifers.—1st. H. N. Washbon, Butternutts, $10; 2d. L. F. Allen, Buffalo, Diploma.

AYRSHIRES.—(None offered.)

CROSS BREEDS.

Cows.—1st (not awarded.) 2d. H. N. Washbon, Butternutts, $10; 3d. J. W. Bacon, Waterloo, Vol. Trans.

Two-year-old Heifers.—1st. (not awarded;) 2d. Enos T. Throop, Owasco, $10.

Yearling Heifers.—1st. C. T. Baldwin, Owasco, $5; 2d. Geo. A. Mason, Jordan, Col. Tour; 3d. S. M. Brown, Elbridge, Vol. Trans.

Heifer Calves.—1st. H. N. Washbon, Butternuts, Col. Tour.

Discretionary premium, John G. Wheeler, Sennett, Vol. Trans.

NATIVES.

Cows.—1st. Ira Hopkins, Auburn, $15; 2d. Chas. W. Brown. Sennett, $10.

Yearling Heifers.—1st. Geo. A. Mason, Jordan, $5. 2d. Wm. J. Phelps, Owasco, Col. Tour.

Heifer Calves.—Nath. Lynch, Sennett, Col. Tour.

WORKING OXEN.

Best Ten Yoke.—1st. J. S. Wadsworth, Geneseo, $20; 2d. J. M. Sherwood, Auburn, $10: 3d. Sheldon, Fellows, and others, Sennett, Vol. Trans.

Best Single Yoke.—1st. E. Sheldon, Sennett, $15; 2d. J. S. Wadsworth, Geneseo, $10; 3d. J. M. Sherwood, Auburn, Vol. Trans.

Three-year-old Steers.—(Best yoke.) 1st. J. Boies, Homer, $10; 2d. J. S. Wadsworth, Geneseo, $5; 3d. Wm. Hayden, Mentz, Diploma.

Two-year-old Steers.—1st. E. Sheldon, Sennett, $10; 2d. J. Boies, Homer, Col. Tour; 3d. Amos Barnes, Sennett, Vol. Trans.

Yearling Steers.—1st. Herod Otis, $8; 2d. J. Boies, Homer, Col. Tour.

FAT CATTLE.

Best Pair Oxen.—1st and 2d. J. Boies, Homer, $15 and $10; 3d. A. Pine, Pittstown, Col. Tour.

Oxen or Steers.—1st. G. T. Oliphant, Mt. Morris, $10; 2d. Henry Willard, Cayuga, $5.

Cows or Heifers.—1st, 2d, and 3d. J. S. Wadsworth, Geneseo, $10, $5, and Vol. Trans.

HORSES—(For all work.)

Stallions.—1st. E. Fuller, Canandaigua, $10; 2d. Caleb Gasper, Marcellus, $5; 3d. Isaac Fairchild, Cortland, Diploma; 4th. Joseph Morrison, Ledyard, Vol. Trans.

Brood Mares.—1st. David A. Monroe, Camillus, $10; 2d. E. A. Howland, Venice, $5; 3d. Jos. H. Stanley, Cazenovia, Diploma; 4th. J. Boies, Homer, Vol. Trans.

Discretionary Premiums.—Reuben Tift, Veteran, for Black Prince, Vol. Trans.; Cyrus Breed, Oswego, for Golden Farmer, Vol. Trans.; Geo. Fordon, Geneva, for Perfection, Vol. Trans.

FOR DRAUGHT.

Stallions.—1st.—Benj. Pettit, Bridgwater, $10; 2d. S. F. Sellen, Lansing, $5; 3d. W. Colquhoun, Cornell, Canada, Diploma.

Mares.—1st. Jos. Mabbet, Skaneateles, $10; 2d. for a grey mare, owner unknown to the committee, $5; 3d. B. F. Bonney, Hamilton, Diploma.

BLOOD HORSES.

Stallions.—1st. Edward Long, Cambridge, for Sir Henry, $10; 2d. S. W. Holmes, Chatauque Co., $5; 3d. Nelson Little, Lodi, for Culpepper, Diploma; 4th. Mr. Ferguson, Oswego, for Kentucky Hunter, Vol. Trans.

Discretionary Premiums.—John H. Gardner, for Young Emperor, two yrs. old, $10; Ira McGonegal, for Virginia, Diploma.

Mares. 1st. Joel B. Nott, Albany, $10; 2d. Isaac Fairchild, Cortland, $5; 3d. G. Howland, Diploma; 4th. J. W. Coatman, Aurelius, Vol. Trans.

Three-Year-Old Stallions.—1st. Wm. R. Grinnell, for Champion, $10; 2d. Henry Tully, Tyre, $5; 3d. Isaac Fairchild, Cortland Co., Diploma; 4th. J. C. Burdict, Truxton, Vol. Trans.

Discretionary Premiums.—Jas. Black, Bath, for Matched Colts, Vol. Trans.

Geldings.—1st. A. Merrill, Rome, $5; 2d, to No. 518, owner unknown to the committee, Vol. Trans.

Matched Horses.—1st. Amos Lewis, Dryden, $10; 2d. W. A. Dutcher, Milo, Diploma; 3d. Olney Gould, Gaines, 2 Vols. Trans.

SHEEP.—Long Wooled.

Bucks.—1st. Wm. Van Heusen, Champion, $8; 2d. W. H. Sotham, Albany, Col. Tour; 3d. L. F. Allen, Buffalo, Diploma.

Ewes.—1st. W. H. Sotham, Albany, $8; 2d. Lewis Taylor, Skaneateles, Col. Tour; 3d. Wm. Buell, Rochester, Diploma.

Lambs.—L. F. Allen, Buffalo, $5.

MIDDLE WOOLED—(*South Downs.*)

Bucks.—1st. Z. B. Wakeman, Herkimer, $8; 2d and 3d, J. M. Sherwood, Auburn, Col. Tour and Diploma.

Ewes.—1st. J. M. Sherwood, Auburn, $8; 2d. Z. B. Wakeman, Herkimer, Col. Tour.

Lambs.—Z. B. Wakeman, Herkimer, $5.

MERINOS AND THEIR GRADES.

Bucks.—1st. Joseph Blakeslee, North Salem, $8; 2d. J. L. Randall, Col. Tour; 3d. Wm. Howard, Diploma.

Ewes.—1st. J. M. Sherwood, Auburn, $8; 2d. J. L. Randall, Col. Tour; 3d. William Howard, Diploma.

Lambs.—Reed Burritt, Burdett, $5.

SAXONS AND THEIR GRADES.

Bucks.—1st. S. B. Crocker, Vernon, $8; 2d and 3d. S. H. Church, Vernon, Col. Tour and Diploma.

Ewes. 1st. S. H. Crocker, Vernon, $8; 2d and 3d. S. B. Crocker, Col. Tonr and Diploma.

FAT SHEEP.

J. W. Collins, E. Bloomfield, $10.

SWINE.

Boars. 1st. C. R. Nicools, Darien, $10; 2d. G. V. Sackett, Seneca Falls, Col. Tour; 3d. H. Hubbard, Canandaigua, Diploma; 4th. Geo. Carlisle, Bethany, Diploma.

Sows.—1st. Wm. Howard, Owasco, $10; 2d. A. Shaw, Scipio, Col. Tour; 3d. E. T. Throop, Owasco, Diploma.

Pigs.—1st. Wm. Howard, Owasco, Col. Tour; 2d. Chester Moses, Skaneateles, Diploma; A. Shaw, Scipio, do.; C. N. Nichols, Darien, do.

POULTRY.

Dorkings.—L. F. Allen, Buffalo, $3; Polands—Franklin C. Moses, Skaneateles, $3; Large Fowls—J. F. Osborn, Mentz, $3; Ducks—J. F. Osborn, $3; Turkeys—M. B. Converse, Mentz, $3; Greatest Variety Fowls—Sam. R. Osborn, Flemming, $10.

PLOWS.

1st. Howland Delano, Mottville, Certificate; 2d. J. B. Gaylord, Auburn, Diploma; 3d. David Anthony, Springfield Vol. Trans.

WAGONS, HARROWS, &c.

O. Barton, Onondaga, Silver Medal.

BEST CULTIVATOR.—D. B. Rogers, Seneca Falls, Silver Medal.

BEST FANNING MILL.—1st. E. Taylor, Rochester, Certificate, (Grant's Patent;) 2d. D. Clow, Mentz, Silver Medal; 3d. John Gilbert, Diploma; 4th. Orrin Heffron, Poplar Ridge, Vol. Trans.

BEST HORSE-POWER.—Richard Montgomery, Onondaga, Silver Medal; 2d. John A. Pitts, Rochester, Diploma; 3d. Buell & Nichols, Cazenovia, Vol. Trans.

BEST CORN STALK CUTTER.—1st. J. C. Rich, Monroe, Silver Medal; 2d. C. Burnett, Lyons, Diploma; 3d. George Catchpole, Geneva, Vol. Trans.

BEST THRESHING-MACHINE AND SEPARATOR.—1st. John A. Pitts, Rochester, Silver Medal; 2d. E. Hicks, Wyoming, Diploma; 3d. Buell & Nichols, Cazenovia, Vol. Trans.

DRILL BARROW, OR CORN-PLANTER.—A. M. Badger, Rochester, Diploma.

BEST STRAW-CUTTER.—1st. E. Lockwood, Norwalk, Conn., Silver Medal; J. C. Rich, Monroe, Diploma; 3d. J. W. Webb, Ledyard, Vol. Trans.

BEST CORN AND COB CRUSHER.—John A. Pitts, Rochester, Certificate.

HORSE RAKES.—L. M. Whitman, Pike, Diploma.

HAY AND MANURE FORKS.—Barton & Belden, Rochester, Diploma.

AXES.—Barton & Belden, Rochester, Diploma.

HOES.—R. M. Hine, Throopsville, Diploma.

GREATEST COLLECTION OF AGRICULTUUAL IMPLEMENTS.—F. Waters, Chautauque, Silver Medal.

CORN SHELLER.—T. D. Burrall, Geneva, Diploma.

[Remainder of the premiums given next month.]

INQUIRIES.

CHEAP STEAMING APPARATUS.—S. D. B., (Northwest, Williams Co., O.) You can make a cheap steaming apparatus by fitting a box on the top of a common kettle or boiler, in such a manner that all the steam generated shall pass into the box through holes made in its bottom. We have seen this made to answer a very good purpose—a boiler that would hold two bushels had a box placed on it that would hold four bushels; the kettle and box were both filled with vegetables, and while those in the kettle were boiling, those in the box would be cooked by the steam.

TRANSPLANTING EVERGREENS.—J. McM., (South Hanover, Ia.,) We have noticed the best success in transplanting such trees early in spring, while the ground is soft and moist, but have known them do well when set in the fall. We think they should not be pruned excepting to take off, carefully, dead limbs.

"HORSE NETTLE."—E. W. J., (Fort Defiance, N. C.) The plant sent under the name of "horse nettle," is the *Physalis pubescens*, of the natural order *Solanea*, —(potato tribe.) It is not common in this section. It is described as an annual, by Loudon. We are unable to say, from want of practical acquaintance with the plant, what would be the most ready mode of extirpating it; but we should think there would be no difficulty in keeping it down by constant cutting close to the ground, so that it should not form seed, or by working the ground often with the plow, or some tool that would destroy it. By either of these modes, it would, after a while, be eradicated.

BLOOD SPAVIN.—C. B., (Redford, Mich.,) In reference to blood spavins, Youatt says—"Repeated blisters will afford the fairest prospect of removing the tumor, or firing may be tried; but in the majority of cases, the disease will bid defiance to all our means, or will return and baffle our hopes when we had seemed to have been accomplishing our object. A horse with a bog (or blood) spavin will do very well for ordinary work. He may draw in a cart or trot fairly in a lighter carriage, with little detriment to his utility; but he will never do for rapid or hard work, and it is in vain to attempt to make him."

CALCAREOUS EARTH.—G. M., (Erie, Pa.) The sample of earth forwarded by you is calcareous tufa. It has been seen by Prof. EMMONS, who thinks that its qualities are so obvious that it is not necessary to make an analytical examination. It is believed that it would make the best of lime by burning. The effects of the tufa, in a fine state, would be similar to those of carbonate, or air-slacked lime.

THE CULTIVATOR.

ALBANY, OCTOBER, 1846

TO CORRESPONDENTS.

COMMUNICATIONS have been received, since our last, from Wayne, R. R. Child, J. W. Strong, Ed. W. Jones, Arator, John D. Jones, Wm. R. Prince, Z. Burns, J. W. Millan, J. D. Burdett, C. Betts, Norfolk County, R. T., G. N. S., B., Richard Owen, D. F. Marshall, E. N. Horsford, Agricola, W. R. Prince, Wm. A. Garriques, C., A. G. Carl, R. H. Williams, John Harland, J. R. Starr, B. P. Robbins.

BOOKS, PAMPHLETS, &c., have been received as follows:—

The Trees of America, Native and Foreign, pictorially and botanically delineated, and scientigcly and popularly described. By D. J. BROWNE, author of the Sylva Americana. From the publishers, Mes-rs. Harper & Brothers, New-York. A beautiful large octavo volume of 532 pages. [Notice next month.]

Catalogue of the Ashton Nursery of THOMAS HANCOCK, near Burlington, N. J.

Catalogue of Fruit and Ornamental Trees, Shrubs, Herbaceous Plants, &c., cultivated and for sale at the Nursery of J. J. THOMAS, Macedon, Wayne Co. N. Y.

PRINCE'S Descriptive Catalogue of Roses cultivated and for sale at his Linnean Garden and Nurseries at Flushing.

SILLIMAN'S American Journal of Science and Arts, for September.

Box of Pears from E. L. HOLDEN, Shrewsbury, Vt [Received Sept. 24—too much decayed to permit us to form any opinion respecting them.]

The Farmer's Book and Family Instructor, compiled and published by J. PRITZ, Chambersburg, Pa. From the publisher—570 pp. octavo.

Watermelon Seeds, from C. D. SMITH, Chicago.

A number of Prize Lists and newspapers, from various individuals. The Western Farmer's and Gardener's Almanac. Indianapolis, published by Wm. Sheets & Co.

MONTHLY NOTICES.

☞ Part VII of COLMAN'S EUROPEAN AGRICULTURE reached us too late for a notice in this number. It is principally taken up with the subjects of Draining, Sub-soil Plowing, Irrigation, Rotation of Crops, and Soiling, or House-Feeding. Published by A. D. PHELPS, Boston.

SALE OF AYRSHIRE STOCK.—The Ayrshire herd of GEO. RANDALL, Esq., New-Bedford, Mass., is offered for sale at auction on the 6th of October. The herd consists of eight cows, thirteen heifers and heifer calves, and two stock bulls. Several of them are from the much celebrated Swinley blood.

DEATH OF JUDGE DARLING.—We learn by the New-Haven *Register*, that the Hon. NOYES DARLING died at his residence in that city, on the 17th ult., at the age of 64. Judge D. was a gentleman of thorough education, and has been widely known, particularly as a writer on agriculture and horticulture. Our readers will recollect his frequent and able contributions to our columns, and will feel with us sincere regret that they are forever ended. In an obituary notice of his death, the Register says—"Though for many years prominent in public life, the employment which seemed most to in-

terest him, was the cultivation of the soil, and that too by his own hands. He was a practical farmer, and horticulturist, laboring diligently not only on his own land, but in the field of science, wherever he could make it applicable to his favorite pursuit."

Rensselaer County Ag. Society.—The exhibition of this society took place at Troy on the 23d and 24th September. Want of room compels us to defer a particular notice till next month.

Death of Col. McDonald.—We learn with much regret, that Col. Alexander McDonall, of Eufaula, Alabama, died on the 16th of August last. Our readers will recollect his name, as having frequently appeared in our columns. He was much devoted to the cause of improvement in agriculture, and by his zealous efforts conferred very important benefits on the section of country in which he resided.

Agricultural College.—We see it announced that James Gowen, Esq., of Philadelphia, has purchased the Mount Airy College property, near his residence, "with a view to the establishment of an institution for the instruction of youth in theoretical and practical agriculture, including horticulture, upon the most approved principles of enlightened experience and rational science." Mr. Gowen has been long known as a most devoted friend to the agricultural interest, and one possessed of ample means for carrying out such an undertaking. We have not yet learned the details of the plan, but understand that Mr G. intends to employ the ablest teachers, and will make the course of instruction as liberal as that of any of our colleges. When the scheme is more fully developed, we hope to be be able to give the particulars in full.

Mr. Mitchell's Return.—By a letter from D. G. Mitchell, Esq., dated ship Burgundy, off Sandy Hook, 10th Sept. last, we are much pleased to learn of that gentleman's safe arrival, after an absence from this country of about two years. Our readers, by whom Mr. M.'s interesting letters from Europe were so well received, will be pleased to know that he will furnish us with occasional extracts from his unpublished notes.

New and Useful Machine.—Mr. L. G. Hoffman, of this city, has invented an egg-hatching machine, which appears to possess many advantages over any other for that purpose that has been before known, particularly on the score of cheapness and simplicity. Mr. H. has had his machine for some time in operation, and he feels confident that it will bring out 98 chicks to every 100 eggs, provided the elements of life existed in the eggs at the commencement of the process. The machine is about two and a half by two feet square, and capable of hatching from 500 to 600 eggs at a time. It is made of tin, and surrounded by water warmed to a suitable degree of temperature, by two heaters, on either side, one heater adapted for charcoal, for day use, and the other for night, by a solar lamp, burning less than a pint of damaged lard. Connected with the oven proper, is a brooding chamber, so constructed that the same heat which imparts the necessary temperature to the oven above is reflected in the chamber below, throwing a gentle warmth, on the "mother," (a dressed sheep skin with the wool on, fitted to a frame, and capable of being raised or depressed to the size of the chicken,) which is intended to take the place of the natural parent.

Mr. H. estimates the cost of a machine, capable of hatching 1000 eggs, between forty and fifty dollars, and the expense of producing the 1000 between $1 and $1.50 for the cost of the heat. We noticed several young turkeys and chickens in Mr. H's aviary, which appear as healthy and active as any of their brethren of the barn-yard and farm. A patent has been applied for.

Etrurian Wheat.—A correspondent in Onondaga county, is desirous of obtaining a few bushels, or a smaller quantity of this kind of wheat. It is said to have been introduced into the country by Com. Chas. Stewart, from Italy. The advantages are, that it is not liable to be injured by the Hessian fly, is hardy, and yields well. It is described as a white winter wheat, without beards. Will some one inform us where this wheat can be had *pure*, and at what price?

Merino Sheep.—E. W. Drury, Esq., formerly of Middlebury, Vt., lately passed through this city on his way to Wisconsin, with several Merino sheep, which had been selected chiefly from the flocks of R. V. R. Horton, of Hubbardton, and S. W. Jewett, of Weybridge, Vt. Both these flocks are well known. Mr. Drury handed us a memorandum of the weights of the fleeces of some of Mr. Horton's sheep, for the present season, from which it appears that five bucks, (three yearlings and two 2 years old,) gave an average of 11 lbs. 3 oz. of wool—the fleeces ranging from 8 lbs. 8 oz. to 14 lbs. 7 oz. The memorandum also states that ten ewes of this flock averaged 7 lbs. 1 oz.—ten others 6 lbs. 6 oz.,—ten others 5 lbs. 9 oz.,—and one ewe, five years old, 11 lbs. 1 oz. A certificate is appended to the memorandum, signed by Ira A. Havens, Henry N. Skeels, Lowell C. Gregory, and E. L. Hartwell, stating that they were present while the sheep were sheared, that the fleeces were correctly weighed, and that it was well-washed, clean wool, of good quality. Mr. Horton's flock is stated to have been bred wholly from that of Andrew Cock, formerly of Long-Island.

Meeting of Wool-Growers.—We learn that a meeting of twenty-two representatives of the wool-growing interest, from Pennsylvania, Virginia, and Ohio, was held at Springfield, Mass., August 18th last, at which Alexander Campbell, of Virginia, was appointed chairman, and William H. Ladd, of Ohio, appointed Secretary. The object of the meeting was declared to be to devise measures for ascertaining from time to time, the value of wool both at home and abroad, in order to facilitate sales and secure fair prices. A committee, consisting of Samuel Patterson, of Pennsylvania, Jesse Edgington, of Virginia, John Brown, now of Massachusetts, Wm. H. Ladd, of Ohio, and L. A. Morrell, of New-York, was chosen for the purpose of soliciting information upon the general subject of wool-growing and manufacturing in the United States; the said committee to report to a general meeting of wool-growers to be held at Steubenville, Ohio, on the 4th of February next. In the mean time the secretary is to see that a suitable address is made to wool-growers, setting forth the advantages that will accrue from a combination of effort and action in advancing the wool-growing interest.

Disease among Horses.—It is stated that more than 500 horses died on Long Island during the months of July and August—mostly in the latter month—from an epidemic, which seems to have been of a malignant character. No satisfactory cause has yet been ascertained for the disease, nor any successful mode of treatment discovered, so far as we have learned. It is stated in some papers that those horses only which have been at grass at some time during the season, have been attacked.

Improved Shower Bath.—Among several improvements in the construction of shower baths, which have come under our notice, none appear to us to combine as many advantages as one invented by H. R. Prouse, of Troy, and for sale by J. S. Gould, of this city. By means of a pump, which is very easily worked by the hand of the bather, the water is raised from a reservoir at the base of the bath, and precipitated in a shower over the body. Any quantity of water, from six quarts to six pailsful, may be used, and the bath may be prolonged any length of time, at the will of the operator. The water may also be thrown with greater or less force, as is desired. It is readily cleansed, the water being drawn off by the pump.

A Good Cow.—A correspondent at Lyons, N. Y., informs us that he has a cow from which was made thirteen pounds of butter in one week—(from 9th to 16th June.) Her milk was grass-feed only, and no extra pains were taken with the milk. He further states that on the 20th of June, the milk yielded by this cow weighed sixty-one and a half pounds. The cow ran in a red-clover pasture. She was got by a Durham bull, and her dam was a mixture of Holderness and Teeswater blood.

Curing Pork in Hot Weather.—Many have ex-

perienced difficulty in curing meat, especially pork, in hot weather. Mr. FIELD, of Charlemont, Mass., informs us that he has practised the following mode with complete success. Pulverize double the quantity of ice that is used of salt; mix the salt and ice together in salting the meat—that is, scatter the salt and ice over the meat as the layers are packed. The mixture of salt and ice produces a great degree of cold, and the meat is quickly cured.

FRUITS.—Since our last we have received the following fruits: From F. ARMES, Conway, Mass., specimens of apples, for a name. The same apple has also been received through Mr. MAYELL, of this city, from Saratoga. We are unable to identify it, but it is a very good apple for the season, and highly deserving cultivation. Will Mr. ARMES send us a few scions for next spring? From J. C. HASTINGS, Clinton, Oneida Co., samples of a seedling pear which originated in his neighborhood. We regret that the specimens were so much over-ripe when they reached us as to render it impossible to judge of the quality with certainty. We are inclined to think it deserving trial. From JOHN LOSSING, of this city, fine specimens of the Bartlett pear, one of which weighed ten ounces. From C. VAN BENTHUYSEN, specimens of the White Magnum Bonum, or Egg plum, one of which measured 6½ inches in circumference. From E. DORR fine specimens of the Lemon Clingstone peach; also a good seedling free-stone, and fine samples of the Isabella and Wellington grapes.

ROT IN POTATOES.—An article on this subject from Norfolk county, Mass., will be found in another part of this number. Since it was put in type, we have received a note from the writer stating that late examinations have convinced him that the crop in his section has suffered from this cause to a much greater extent than had been previously supposed.

CORRECTION.—Mr. Z. C. ROBBINS wishes to make the followng correction:—"In reporting Mr. Dubois' improvement in carriage brakes in the last number of the Cultivator, the word *hounds*, (a well known technical term with wagon and carriage makers,) was printed *hands*."

LONG WOOL.—Mr. EDWARD HALLOCK, of Milton, Ulster county, N. Y., has sent us samples of the fleeces of four yearling ewes. The samples are from eight to ten inches in length, without stretching, and the fleeces from which they were taken, are stated to have weighed, respectively, 8, 8¾, 8¾, and 9¾ pounds. They are so perfectly clean, that the samples have not in the least soiled the paper in which they were enclosed, though the package has been under a slight pressure for ten or twelve days. Mr. HALLOCK'S flock consists of improved Cotswolds, with crosses of the Leicesters. We have seen some capital sheep from this flock at various cattle-shows.

COTTON CULTURE.—G. C., St. Josephs, La., requests that some of our "able Southern correspondents would occasionally give a treatise on the most approved mode of cultivating cotton—also the best way of preparing it for market, the diseases to which the crop is subject," &c. We shall be glad to hear from any of our southern readers on these matters.

MUSK-RATS CAUGHT BY A CAT.—Mr. LEECH, informs us that he has a cat, which, though he will not, (as he says,) catch "cockroaches" will catch "almost everything else." He says—"she often goes a hunting round a pond, and has brought home *thirteen good-sized musk-rats this summer*."

NEW PUBLICATIONS.

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AMERICAN JOURNAL of SCIENCE AND ART.—The September number of this capital periodical contains articles on the Hurricanes of the American Seas; on Zoophites; on the Law of Electro Magnetic Induction; Chemical Examination of Waters; Observations on the Fossil Plants of the Coal Field of Tuscaloosa, Alabama; Generality of Magnetic and Diamagnetic Action, &c. Under the head of Scientific Intelligence, we notice several interesting articles, particularly a very able one on the Rot in Potatoes, by JOHN P. NORTON. The work is edited by the Messrs. SILLIMAN and DANA, and published at New-Haven on the first day of every second month at $5 per year. W. C. LITTLE & Co. are agents for this city.

REMARKS ON THE CULTURE OF THE GRAPE AND THE MANUFACTURE OF WINE IN THE WESTERN STATES; by MELZER FLAGG, M. D., of Cincinnati. This is a valuable pamphlet, which constitutes the report of a committee appointed by the Cincinnati Horticultural Society, for the purpose of collecting statistics in relation to the vineyards of Hamilton county, Ohio. The section to which this report refers, is the most distinguished for the successful culture of the grape, and especially for its manufacture into wine, of any part of this country. From the statistical table appended to the report, it appears that there are in Hamilton county 83 vineyards, containing 250 acres—114 acres being in bearing condition—from which 23,219 gallons of wine were made last year, notwithstanding many of the vineyards there bore for the first time, and that "more than half the crop was cut off by frost and rot." The average yield per acre, for five years in succession, with proper care, is estimated at 450 to 500 gallons annually. Analyses of the wines of different varieties are given, which, compared with those of European manufacture, show that American wine contains a greater per cent of alcohol than the best Rhine wine, and it is stated will compare with the best European *pure wine*. The report also contains much more information of a valuable character, and we shall recur to it again for the purpose of a more extended abstract.

MASSACHUSETTS SOCIETY FOR PROMOTING AGRICULTURE.

.....

AT the annual meeting of the Massachusetts Society for promoting Agriculture, held June 10th, 1846,

The Hon. John Welles, the President of the Society, communicated his wish not to be re-elected an officer of the society:

Whereupon it was voted—

That we receive with great regret the resignation of our respected President, who for more than a quarter of a century, has with zeal and intelligence labored in the promotion of Agriculture, and who in his whole life, has exhibited to his fellow-citizens a valuable example of activity and of unostentatious devotion to the best interests of society.

[A copy of the record.] BENJ. GUILD,
Rec. Sec'y of Mass. So. for Promoting Agriculture.
June 20th, 1846.

.....

[The *New England Farmer* was the official organ for the publication of the transactions of the Mass. Society, but as the discontinuance of that paper, at the close of its twenty-fourth volume, precluded a public notice in its columns of Mr. WELLES' resignation, we with pleasure give the above an insertion; and we beg leave, at the same time, to respond to the sentiment embraced in the resolution of the Society relative to the important aid which has for many years been rendered by Mr. W. in advancing the agricultural interest of Massachusetts. That state may be said to have taken the lead in the establishment of agricultural societies and in giving the first great impulses to a spirit of rural improvement, to the extensive diffusion of which the whole country is so largely indebted for the signal prosperity it has enjoyed. The Society over which Mr. WELLES for twenty-five years presided, and of which he has ever been one of the most zealous and liberal supporters, was organizd in 1792. At an early period we find his name enrolled among the members. Of his contemporaries, we recognize the names of DERBY, QUINCY, and JAQUES, among the few who yet remain; PICKERING, LOWELL, the two VAUGHANS, PARSONS, SULLIVAN, and many others, "rest from their labors," though all will be long and gratefully remembered.]

SEEDLING APPLE TREES FOR SALE,

BY T. G. YEOMANS, at his nursery, Walworth, Wayne Co., N. Y., one year old, and thrifty, being from about 5 to 18 inches high, at $3 per thousand. Packages of 5000 packed free of charge. 50 cents per 1000 for less. Orders to be post-paid, accompanied with remittances.

Oct. 1—2t.

FRUIT TREES FOR SALE CHEAP.

AT the Walworth Nurseries, about 7000 thrifty Peach Trees, of the choicest varieties cultivated in Western New York, at $15 per hundred, or 18¾ cents smaller quantities. Also, several thousand Pear, Plum, and Cherry trees, of select varieties. Address, post-paid, at Walworth, Wayne Co., N. Y.

Oct. 1—2t. T. G. YEOMANS.

PREMIUM DAGUERREOTYPE PORTRAITS,

At **GAVIT'S** *well known Galleries, No. 6 Second Floor Exchange, Albany.*

THE subscriber wishes to announce that a perfect Daguerreotype can be procured at all times at his rooms, and would refer those who wish to patronize him to the many flattering notices of the press generally. Also that he has taken the *first premium* at the last *two* exhibitions of the State Agricultural Society at Utica and Auburn.

Instructions given in the art on the most scientific principles and at moderate terms. Every article used in the business furnished to order

Caution.—The undersigned would caution those wishing to learn the business, to beware of the instruments furnished by most *travelling operators*, as they are mostly useless articles.

Oct. 1, 1846. D. E. GAVIT.

DUTCHESS AGRICULTURAL INSTITUTE.

Located twelve miles east of the village of Poughkeepsie, on the "Wilkinson Premium Farm," in the western valley of Union Vale, Dutchess Co.

THE winter session of this institution commences the first Thursday of October; the summer session the first Thursday of April.

The course of studies in this institution is such as to give the student every facility for acquiring a most thorough knowledge of *Scientific and Practical Agriculture*, with the use of the best modern improved implements; a select Farmer's Library, with numerous Agricultural Periodicals, and instruction in all the collateral branches.

There will be regular lectures, of which the students will make abstracts, to serve both as examinations and as exercises in composition, delivered on

TECHNICAL MINERALOGY—applied to Rural Economy, Commerce, Chemistry, Mining, and Architecture—illustrated by Mineralogical Cabinet, and excursions for observation.

PRACTICAL BOTANY—applied to Horticulture, Veterinary Medicine, Rural and Domestic Economy—illustrated by living specimens, and excursions for observation.

ZOOLOGY—applied to Rural Economy, Commerce, and Manufactures—illustrated by living subjects, skeletons, &c. The Zoonic course will commence with the HORSE.

NATURAL PHILOSOPHY AND AGRICULTURAL CHEMISTRY—illustrated by efficient experiments, by Prof. S. E. HASKEL, late of the Van Rensselaer Institute, of Troy.

Mathematics, in all their branches are thoroughly taught.

A practical knowledge of the Modern Languages is insured by weekly Lectures, Discussions, Orations, Essays, and Conversations in them.

The soil of the farm embraces a great variety, and is well adapted to experimental farming. Its location is pleasant and healthful,—the building extensive and commodious.

Fee for the year, $200, payable semi-annually in advance—which includes Tuition, Board, with beds and bedding, Toilette Furniture, Washing, Mending, Fuel, and Lights.

☞ Farmers, pupils from other schools, or other citizens desirous of attending each or any course of lectures, can obtain admission tickets by applying to the Principal; for a single course for $5, or $3 per course where they attend two or more—payable in advance. Extensive accommodations for horses are provided.

This Institution is under the patronage of the Am Ag. Association, The Farmer's Club of the Am. Institute, and the Dutchess Ag. Society. Address JOHN WILKINSON,

Principal Dutchess Ag. Institute, Poughkeepsie, N. Y.

REFERENCES.

Board of the American Institute:
Board of the American Agricultural Association;
Rev. L. M. Vincent, New-York;
Prof. Cyrus Mason, " "
Zebedee Cook, Esq., " "
Doct C. H. P. McLellan, Principal of the Poughkeepsie Female Academy;
Charles Bartlett, A. M., Principal Collegiate School, Poughkeepsie;
William A. Davies, Esq., President of the Farmers' and Manufacturers' Bank;
Matthew J. Myers, Esq., President of the Merchants' Bank;
Rev. Abm. Polhemus, Hopewell, Dutchess County;
" H. G. Ludlow, Poughkeepsie; " "
" S. Mandeville, La Grange; " "
John Van Wick, Esq., New Hamburg. "

Oct. 1—2t.

NURSERY OF J. J. THOMAS,

Macedon, Wayne Co., N. Y.

A FINE collection of fruit trees are offered for sale at this nursery, *all* of which have been propagated from *bearing trees*, whose genuineness or excellence, and fitness for the climate, have been thoroughly proved by the personal examination of the proprietor. It has been a principal object to avoid the confusion resulting from a numerous list of varieties, and to present only a moderate collection of the very finest kinds. To accomplish this, many years have been occupied, and selections have been made from several hundred sorts in bearing, none but the finest being chosen, after thorough examination and trial.

The Ornamental Department comprises a very select list of hardy shrubs and herbaceous perennial plants.

The new Catalogue of this nursery will be forwarded gratis by mail, on every post-paid application.

Oct. 1—2t

ISABELLA GRAPES,

OF proper age forming vineyards, propagated from and containing all the good qualities which the most improved cultivation for over ten years has conferred on the vineyards at Croton Point, are now offered to the public. Those who may purchase will receive such instructions as will enable them to cultivate the Grape with entire success (provided their location is not too far north) All communications, post-paid, addressed to R. T. UNDERHILL, M. D., 400 Broadway, New-York, will receive attention. He feels quite confident that he has so far meliorated the character and habits of the Grape Vines in his vineyards and nurseries, by improved cultivation, pruning, &c., that they will generally ripen well and produce good fruit when planted in most of the northern, and all the western, middle and southern states. The fall is found to be as good a time for planting vineyards as the spring, if not deferred too late in the season.

New-York, Oct 1, 1846—2t.

CHERRY STOCKS FOR SALE.

A FEW thousand fine Cherry Stocks, of mazzard varieties, of one years' growth and from one to two feet high, for sale on all pre-paid orders, at $10 per thousand, with no charge for packing, by J. J. THOMAS,

Oct. 1. at his nursery, Macedon, Wayne Co., N. Y.

MOUNT HOPE BOTANIC NURSERIES,

Rochester, N. Y., (South St. Paul-st., nearly opposite the Cemetery.)

THE Proprietors of this establishment offer for sale an unusually large and fine collection of Fruit and Ornamental Trees, Flowering Shrubs, Vines, and Roses, Hardy Herbaceous Plants, Double Dahlias and Bulbous Roots; Grape Vines, Raspberries, Strawberries and Gooseberries; Asparagus Roots, Rhubarb, &c.; Hedge Plants, Green House Plants, &c.

The collection of Fruit Trees comprises the most popular varieties cultivated, and has been grown with the greatest possible care to ensure accuracy. The proprietors are practical and experienced nurserymen, and wholly devoted to the business;—all the important operations are either performed by themselves or under their immediate inspection.

Experience has fully proved that the trees grown at this point, in addition to being free from diseases, are better adapted to cold climates than those of any other portion of the United States.

The collection of Apples includes several thousands of the famous new American Apple, the "Northern Spy."

A large assortment of Pears of the choicest kinds, are propagated on quince stocks for Dwarfs and Pyramids, and will bear the first or second year after planting; they are admirably adapted for Garden culture. A lot of these are now on hand, of extra size for immediate bearing.

The collection of Ornamental Trees is large and fine, comprising several hundred of the Paulownia Imperialis. The catalogue of Roses embraces the most popular new varieties. A great variety are propagated for Standard or Tree Roses, 1 to 6 feet high, with fine heads.

Of Double Dahlias the assortment is unsurpassed, including the finest show flowers yet introduced to this country, and many that were imported last season at 5 guineas each, of which a separate catalogue will be furnished.

The stock of Green House Plants is very extensive, and includes the most beautiful new Pelargonium (Geranium,) Fuchsia, Camellia, Calceolaria, Verbena, Cactus, &c., &c., all finely grown, and will be sold at greatly *reduced prices*.

Trees and Plants packed in the best manner, and shipped to any part of the country agreeable to order.

A new edition of our descriptive priced catalogue will be published this month, and sent gratis to all *post-paid* applications. Orders from unknown correspondents should be accompanied with a remittance or reference.

ELLWANGER & BARRY.

Rochester, Oct. 1, 1846.—1t.

KENDALL'S CYLINDER CHURNS.

THE following in relation to the above churns, from a firm in Vermont, who purchase of us, will show in what estimation the cylinder churns are held.

"We wrote you a few days since, to forward three each of the two smallest size churns. Please send us immediately six each of three sizes. Churns are getting in good demand. Our people think there is quite a saving when they can fetch the butter in two minutes, instead of churning two hours with the old fashioned churn. The Kendall churn is getting to be all the go."

The above churns are always for sale at wholesale or retail, at the Albany Agricultural Warehouse, No. 10 Maiden Lane, and 23 Dean-st. LUTHER TUCKER.

WIRE CLOTH SEIVE AND SCREEN MANUFACTORY.

THE subscriber has constantly on hand a large assortment of the above articles, which he offers at the lowest market prices. D. L. CLAWSON.

July, 1846—10 mos. 191 Water-st, New-York.

P. S.—All kinds of wire work manufactured to order.

FOR SALE.

A FEW fine Paular Merino sheep for sale, bucks and ewes; say about 50 ewes from four to six years old, and 40 to 50 buck lambs, that are nice, and of a large size, and 6 or 8 bucks that are from one to four years old, all in fine order.

JOSEPH I. BAILEY.

Newport, Sept. 1, 1846.—3t.

COMMERCIAL GARDEN AND NURSERY, OF PARSONS & Co., FLUSHING, NEAR N, Y.

THE proprietors of this establishment are constantly increasing their stock which now covers nearly seventy acres of ground, and includes every desirable variety of Fruit and Ornamental trees, Shrubs, Roses, Vines, &c Their possession of specimen grounds for the testing of every variety of fruit they cultivate, affords them increased facilities for the attainment of correctness. They would also call attention to their large assortment of Foreign Grapes, some seventy varieties of which they are fruiting under glass.

To venders and those who purchase in large quantities, liberal discounts will be made Catalogues can be obtained gratis of Parsons & Lawrence, 10 Pine st; of A. B. Allen, 187 Water st., or of the proprietors by mail.

Sept 1.—3t. [1]

A GOOD FARM IN AUBURN FOR SALE.

THE subscriber offers for sale the farm on which he now resides, in the village of Auburn, Cayuga county, consisting of 152 acres of good grain aud grazing land, well enclosed and watered, and upon which are one large, and three moderate sized DWELLING HOUSES, Carriage Houses, Barns, Sheds, and other necessary out-buildings, three Apple Orchards, a great variety of choice Fruit Trees and Shrubbery, four durable Springs, three wells, two hundred rods of full stone fence, and an inexhaustible QUARRY of a superior quality of grey and blue lime stone, suitable for cutting and dressing, eligible and convenient for a continued sale of that article, either rough or hewn, according to the demand, and from which most of the elegant stone buildings in Auburn were erected.

This farm extends from North-street to and across State-street, with a front of eighty-six rods on the former and one hundred and sixteen rods on both sides of the latter—upon either of which may be advantageously sold a great number of village lots, at the pleasure of the owner. About 22 acres, including the large house, barns, sheds, two orchards and garden, lie between North-street and the Auburn and Syracuse Railroad; 65 acres, including the stone quarry and one dwelling house, lie between said Railroad and State-street, and the remaining 65 acres, with two dwelling houses, lie west of State-street—all which is in a high state of cultivation, well fenced, conveniently allotted, and in good order. The whole farm, or either of the above parcels, will be sold cheap, and if desired, time will be given for the payment of a large proportion of the purchase money.

Inquire of Luther Tucker, of Albany, Hulbert & Hall, of Auburn, or the subscriber upon the premises. GEO. B. CHASE.

Auburn, Sept. 1, 1846—4t.

PATENT PREMIUM FAN-MILLS.

I. T. GRANT & Co., still continue to manufacture the celebrated Improved Patent Fan-Mills, at the old stand, Junction, Rens. Co., N. Y. These mills have taken the *first premium* at the following places:—New-York State Fair, at the Institute, New-York, the State Fair, at Pennsylvania, and the State Fair at Maryland. The subscribers have no hesitation in saying that these mills surpass anything of the kind ever offered in market. They are the only mill that has ever been produced that will chaff and screen wheat perfectly clean in one operation.

We also manufacture *Grain Cradles* of the very best quality, which have taken the first premium at the New-York State Fair. They are for sale at factory prices, at the following places:—

A. B. Allen's, 187 Water-st., New-York;
D. L. Clawson's, 191 " "
Luther Tucker's Ag. Warehouse, Albany;
H. Warren's, Troy; and
Viall & Warren's, Mechanicsville, Saratoga Co., N. Y.

All orders thankfully received and punctually attended to. All goods delivered at Troy, N. Y., free of charge.

I. T. GRANT, &Co., Junction P. O., Rens. Co., N. Y.

Feb. 1—tf [2]

FINE WOOLED BUCKS.

THE subscriber has had left in his charge, several bucks which are a cross between the Saxon and Merino varieties. They are two years old, of good size and form, and their wool, both in quantity and quality, would be found satisfactory. Further information given on inquiry. SANFORD HOWARD.

Cultivator Office, Albany, Sept. 1, 1846.

GUANO.—200 tons, the balance of the ship Shakspeare's cargo from Ichaboe, in tight casks, for sale in lots to suit purchasers, by E. K. COLLINS & Co., 56 South-st.

The many experiments made this season from this cargo, not only prove the great gain in using it, but that it is at least equal if not superior to any other guano

Sept, 1, 1846.—tf

WOOL.

LIBERAL advances will be made by the subscriber upon wool consigned for sale, or shipment to England.

HAMILTON GAY,

July 1—3t. 53 South-street, New-York.

FRUIT TREES.

THE subscribers would respectfully call the attention of the public to their assortment of FRUIT TREES. They are enabled this fall to offer a choice collection of many of the most esteemed varieties of Apples, Pears, Cherries, Peaches, Plums, &c., &c., &c. The assortment of trees having been considerably increased, persons desirous of obtaining articles in the nursery line, will find it worth while to examine the collection previous to purchasing elsewhere. All of which will be offered at very reasonable prices for cash.

N. B. All articles intended for distant transportation will be carefully packed at the expense of the purchaser, and delivered free of cartage to any part of the city.

WILSON, THORBURN & TELLER.

☞ Orders sent to Wm. Thorburn, Seedsman and Florist, 492 Broadway, Albany, will receive prompt attention.

Sept.1—3t.

TO WOOL-GROWERS.

THE subscribers have a tract of land lying in Patrick Co., Va., consisting of about *ten thousand acres*, which they wish to sell or rent. It has on it immense quantities of the largest timber, with abundance of water, and water power. A portion of the land has been cleared, and produces the finest grass in the world. We would like to dispose of it, or to enter into partnership with any gentleman who would furnish a flock of sheep, and go into the business of growing wool. Apply by letter to either of the subscribers, at Cumberland Court House, Va., or in person to Col. A. Staples, Patrick Co., Va., who will show the land.

WILLIAM W. WILSON

Sept. 1—6t. WILLIS WILSON.

VALUABLE FARM ON STATEN ISLAND FOR SALE.

THE well known farm of the late Samuel Akerly, M. D., situated on the South side of Staten Island, in the town of Southfield, Richmond county, in consequence of the decease of its late owner, is now for sale. It contains 125 acres, 25 of which are woodland; is in a high state of cultivation, and well stocked with a variety of fruit trees. The house has been recently enlarged—is ample and commodious; the barns are new, and the farm is in good fence. It has a wide front to the water on a bay which abounds with the best kind of salt water fish, also with clams and oysters, all easily procured fresh from their native element. The experience of a long course of years, for the main part of the dwelling house has stood for more than a century, has demonstrated that the situation is perfectly healthful.

The late owner, Dr. Akerly, died in July last; he had cultivated the farm for a number of years with great assiduity and care, keeping a daily and most minute register of the precise amount of labor and cultivation bestowed on each field, and noting many important observations which would be highly instructive and useful to the future owner. The purchaser may be furnished with a copy of this diary.

The site of this farm is extremely beautiful—the approach to it from the main road is a private road of about half a mile in length, running mostly through a piece of woodland, consisting of young timber of vigorous growth. After the visitor has travelled on this road about one-third of a mile, there opens upon him a prospect which takes in the low land, comprising the cultivated part of the farm—the placid and bright bay which separates Staten Island from Monmouth county, N. J.,—the highlands of Neversink, with the two lighthouses erected thereon—the lighthouses on and near Sandy Hook, together with the one at Prince's Bay, including the west end of Long Island. All the vessels employed in the commerce of New-York with foreign countries may be seen as they come in and depart, from the dwelling house and several other points on the farm.

The late owner, Dr. Akerly, who was born and educated in this city, after extensive examination and inquiry for a farm to which he might retire, on account of impaired health, selected this spot, to which he removed in the year 1839. Here he sought health and quiet retirement, and found them, until the day before his decease. He became exceedingly attached to the farm as a residence, and would have most reluctantly exchanged it for any other residence whatever. Such were its attractions that he never left it a single day, in winter or summer, but with regret.

For further particulars apply to HIRAM KETCHUM, Executor, No. 31 Wall st., or SAMUEL BOWNE, No. 83 John-street.

July 1, 1846.—3t.

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ALBANY AG. WAREHOUSE.

DISSOLUTION.—The co-partnership heretofore existing between the subscribers, under the firm of E. COMSTOCK & Co., is this day by mutual consent dissolved. The affairs of the late firm will be settled, and the business continued by LUTHER TUCKER.

Albany, Sept. 9, 1844. ELON COMSTOCK.
LUTHER TUCKER.

It will be seen by the above notice that the subscriber has become sole proprietor of the *Albany Ag. Warehouse*. Not wishing to devote his personal attention to the business, he desires to dispose of the establishment, and will sell the stock on hand on such terms as will make it an object for a person disposed to engage in the business in this city. LUTHER TUCKER.

FARM WANTED.

A GENTLEMAN is desirous of purchasing a farm, capable of being occupied strictly as a STOCK FARM, sufficiently near some railroad communicating with the Erie Railroad to facilitate the transportation of stock to market. It is wished that the farm should be situated in a healthful district, with pleasing scenery, and in the immediate vicinity of water, and having a house capable of accommodating a gentleman's family. The soil, and all the appurtenances of the farm, should be such as would yield the owner a good return for his investment. Applications, (*paid*) may be addressed to Box 2031, New-York Post-Office.

Oct. 1—3t.

IMPORTED THOROUGH BRED SHORT-HORN BULL, YOUNG FORESTER.

WM. ATKINSON offers the above named bull for sale, and any gentleman wishing to improve his breed of stock, will find this a most seasonable opportunity of doing so, as Young Forester possesses in an extraordinary degree the splendid qualities for which the Short Horns are so justly celebrated.

He is four years old, his color is a rich roan, his symmetry is perfect, his pedigree unrivalled, and he was bred by one of the most famous breeders in the north of England. It is also worthy of remark, that at the several shows in the province of Canada at which he has been exhibited, he has invariably taken the first premium of his class.

Letters (pre-paid,) addressed to WM. ATKINSON. Guelph, Canada West, will meet with immediate attention.

Oct. 1—3t.

HOVEY'S PATENT SPIRAL STRAW-CUTTER.

THESE machines are thought to excel all others for cutting hay, straw, or corn-stalks. The knives being supported by wings cast on the cylinder, are rendered sufficiently strong to cut the largest corn-stalks with great ease and dispatch, and as the knives are regulated by set-screws, it gives them a great advantage over all other cylinder cutters. There are other cylinder cutters the knives of which are fastened with rings at the end without wings to support them, and on such cutters the knives are wholly unadjustable, except with keys or wedges, the use of which is thought to be an infringement on the rights of Mr. Hovey. The prices of these machines are, for No. 1, $10; No. 2, $12; No. 3, $15; No. 4, $20. For sale at the ALBANY AG. WAREHOUSE, 96 Dean-st., and 10 Maiden Lane.

FOR SALE.

A FEW South Down Rams and Ewes; also Cotswold Rams and Ewes—for sale by the subscriber.

JNO. McD. McINTYRE.

Albany, Sept. 22, '46.—2t

AMERICAN HERD BOOK.

CONTAINING pedigrees of Short Horn cattle, to which is prefixed a concise history of English and American Short-Horns, compiled from the best authorities; by Lewis F. Allen. This valuable book contains the pedigrees of about six hundred cattle and it should be in the hands of every breeder of Short-Horns. A few copies for sale at the Office of the Cultivator.

Oct. 1—3t.

FARM FOR SALE.

A GOOD farm of eighty-two acres, situated in the town of New-Haven, (Oswego Co.) twelve miles east of Oswego village. Said farm is well adapted to grain and the different grasses. It is pleasantly located, well watered, and buildings in good repair, with plenty of excellent fruit. It is within three miles of the village of Mexico, which affords facilities for manufacturing, the various mechanic arts, &c., &c.

For further particulars inquire of the subscriber, living on the premises, or of Dr. B. E. Bowen, of Mexico.

ALPHEUS HERBERT.

New-Haven, Sept. 1, 1846.—1t*

THE ROCHESTER NURSERY—BY S. MOULSON,

CONTAINS a splendid collection of fruit trees, the Northern Spy, St. Lawrence Apple, and most of the new varieties worthy of the notice of connoisseurs, together with the most approved kinds of Cherries, Plums, Pears, &c. Also Hardy Shrubs, Evergreens, &c. Orders respectfully solicited. Trees packed suitable for long distances when required. Six to twelve months credit given for approved notes on interest. S. MOULSON.

Rochester, Oct. 1, 1846—1t.

AGRICULTURAL WAREHOUSE.

183 *Front-st., New-York.*

THE subscriber offers for sale an extensive assortment of Farming and Gardening utensils, consisting in part of plows of Freeborn's, Minor's, Horten & Co.'s, Prouty & Mears', and Ruggles, Nourse & Mason's patterns. The Locked Coulter, and Wrought Share Plow.

Corn Shellers, Fanning Mills, Grain Cradles, Corn and Cob Mills, Straw Cutters, of Greene's, Hovey's, Eastman's, and other most approved patterns.

Horse Powers, Threshing Machines, &c. Gin gear, Mill, Horse-power, and all other castings, constantly on hand. Also a general assortment of Brass, Copper, and Iron Wire Cloth, for Paper, Rice, and other mills. Seives, Screens, Riddles, &c., &c.

Persons ordering articles from the subscriber may depend upon having them made of the best materials and in the most workmanlike manner.

JOHN MOORE.

New-York, Oct. 1, 1846—1t*

PRINCE'S LINNÆAN BOTANIC GARDEN AND NURSERIES,

Flushing, near New-York.

W. R. PRINCE & Co. offer for sale their unrivalled collection of FRUIT AND ORNAMENTAL TREES, &c. The entire Fruit Department is carefully scrutinized by them personally, and ingrafted from the largest collection of bearing specimen trees in the Union, and they challenge a comparison in accuracy with any establishment in America and Europe. Purchasers are soticited to inspect their trees, and witness their superiority in size and vigor. The pre-eminence claimed can be readily tested by sending duplicate orders to them and to any other nursery. They have 3,000 extra sized pears, on pear and quince, 8 to 12 feet high, with heads, very strong, and suitable for immediate bearing, and 20,000 pears, 5 to 8 feet, and 5000 for dwarfs or en quenouille.

Also—Plums and Apricots, on plum of the same sizes, and a large stock of the finest Apples, Cerries, and Peaches, the latter very low, by the hundred or thousand. 10,000 Quinces, 3 to 6 feet. 5,000 Lancashire Gooseberries, assorted. Victoria and other currants. Fastolff, Franconia, and other Raspberries, at low rates. Of Grapes, the assortmrnt comprises all the most celebrated and carefully selected foreign varieties for the table, and 40,000 vines of the best American varieties for vineyards and the table.

The collection of Roses is the largest in the Union, and comprises 80,000 plants, of 1,600 varieties, embracing every novelty that could be selected from ten of the largest collections in Europe, and the plants are much larger than are usually sold. 10,000 Magnolias, 3 to 10 feet; 50,000 Evergreen Trees, of every-class and size. 50,000 Hawthorns and Privets, for hedges, and 70,000 Honey Locusts; 60,000 Large Dutch Asparagus, and 5,000 Tobolsk, Victoria, and Leviathian Rhubarb.

Of Ornamental Trees, they have above 200,000, of every size and class, including 5,000 Paulownia Imperialis, 6 to 15 feet, at $1 each, anp those of 6 feet at $6 per dozen.

The purchaseas may save two years by the superior size of their trees and shrubbery.

☞ Priced Catalogues of all, including a new Catalogue of all the Roses, at reduced prices, and a supplement catalogue of the new varieties oi Fruit and other trees and Plants, and of the extra sized Pears, Plums, &c., will be sent to every *post-paid* applicant.

WILLIAM R. PRINCE & Co.

Oct. 1, 1846—1t.